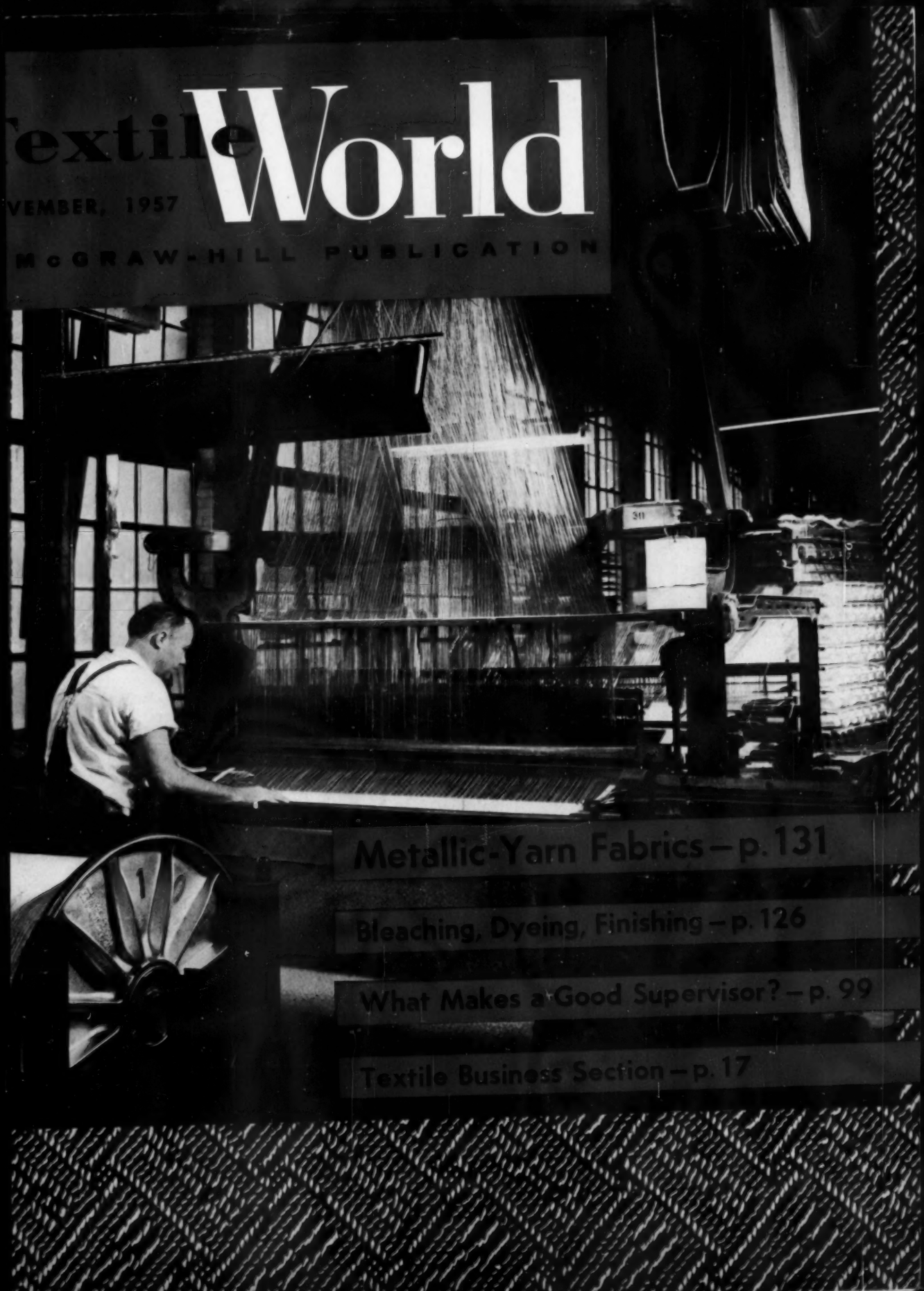
Textile World
VEMBER, 1957
McGRAW-HILL PUBLICATION



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Bleaching, Dyeing, Finishing—p. 126
What Makes a Good Supervisor?—p. 99
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MEMO *to finishers!..*

PERMA SET 330

a methylated urea-formaldehyde resin which imparts a crisp, resilient finish on synthetic fabrics like rayon, nylon, orlon, acetate and combinations. It can be used to give embossed and glazed finishes.

PERMA SET 440

a cyclic urea formaldehyde resin developed for application of wrinkle-resistant and shrinkage-controlled finishes to cotton fabrics. It imparts a full, resilient effect with excellent resistance to chlorine retention. It is used in producing embossed, glazed, shreinered and calendered finishes.

PERMA SET 500 C

a new type thermosetting resin which is used to stabilize rayon and rayon blends and to improve their hand.

PERMA SET 750

a methylated urea-formaldehyde resin which is used to give nylon, acetate and other synthetic fabrics durable stiffness and body. It is recommended for use on nylon nets, marquisettes and shoe fabrics.

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TECHNICAL SERVICE BULLETINS

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CORPORATION

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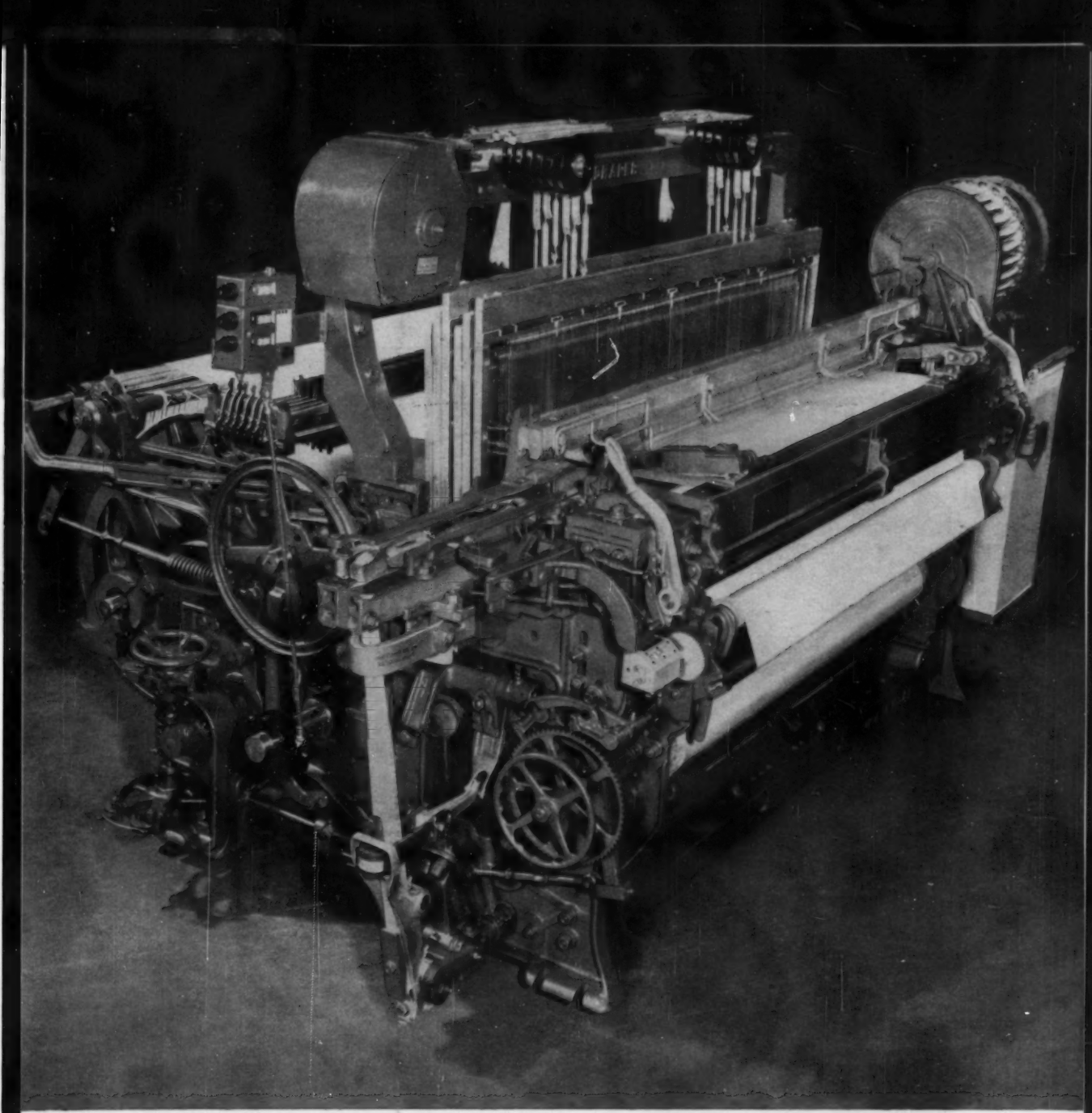

This loom gives you all the competitive advantages

Long range flexibility, practical and economical operation, higher production, increased efficiency and a new low in maintenance cost are major benefits offered by the new Draper X-2.

The changing fashions in cotton and synthetic create a need for a loom which can be converted on short notice to weave a wide variety of fabrics.

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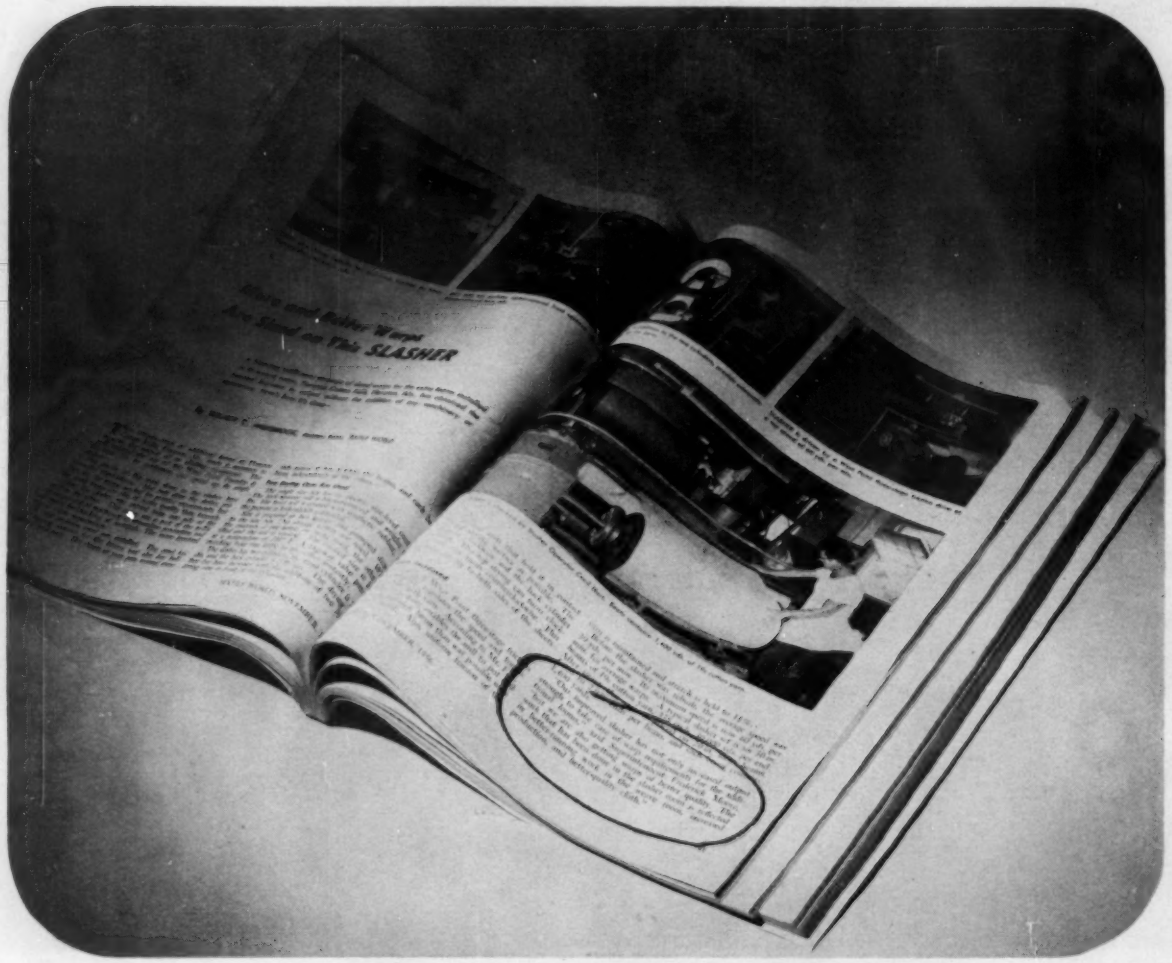
"Our improved slasher has not only increased output enough to take care of warp requirements for the additional looms," **said Superintendent Frederick Moore,*** *"but we are also getting warps of better quality. The work that has been done in the slasher room is reflected in better-running work in the weave room, increased production, and better quality cloth."*



*Excerpt from statement by Supt. Frederick Moore of Florence Cotton Mills, Florence, Ala.

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WEST POINT Foundry & Machine Company

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Textile World

CALENDAR

November

AATCC, Delaware Valley Section, Sheraton Hotel, Philadelphia, Pa., Nov. 1.

AATCC, Western New England Section, annual meeting, Hartford, Conn., area, Nov. 1.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Nov. 6.

National Association of Woolen & Worsted Overseers, Hotel Manger, Boston, Mass., Nov. 8 & 9.

Electrical Applications for the Textile Industry, sixth annual conference, Riddick Laboratory Auditiorium, North Carolina State College, Raleigh, N. C., Nov. 14 & 15.

AATCC, national convention, Hotel Statler, Boston, Mass., Nov. 14 to 16.

December

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 4.

AATCC, Rhode Island Section, annual meeting, Providence, R. I., Dec. 5.

AATCC, Delaware Valley Section, Kugler's Restaurant, Philadelphia, Pa., Dec. 6.

AATCC, Northern New England Section, annual meeting, Hotel Continental, Cambridge, Mass., Dec. 6.

AATCC, Southeastern Section, Dinkler Plaza Hotel, Atlanta, Ga., Dec. 7.

AATCC, Western New England Section, Rapp's Restaurant, Shelton, Conn., Dec. 13.

1958

January

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Jan. 8.

American Society for Quality Control, Textile Div., eighth annual conference, Clemson House, Clemson, S. C., Jan. 30, 31, Feb. 1.

February

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Feb. 5.

1958 Cotton Research Clinic, Pinehurst, N. C., Feb. 12 to 14.

March

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Mar. 5.

Textile Quality Control Association, spring meeting, Poinsett Hotel, Greenville, S. C., Mar. 6 & 7.

April

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Apr. 2.

American Cotton Manufacturers Institute, annual convention, Apr. 10 to 12.

Phi Psi Textile Fraternity, annual convention, Philadelphia, Pa., Apr. 24 to 26.

Fiber Society, Inc., spring meeting, Clemson House, Clemson, S. C., Apr. 30, May 1.

May

Underwear Institute, annual meeting, Hotel Biltmore, New York, N. Y., May 1.

Canadian Textile Conference, Queen Elizabeth Hotel, Montreal, Que., May 6 to 8.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., May 7.

June

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 4.

Materials Handling Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12.

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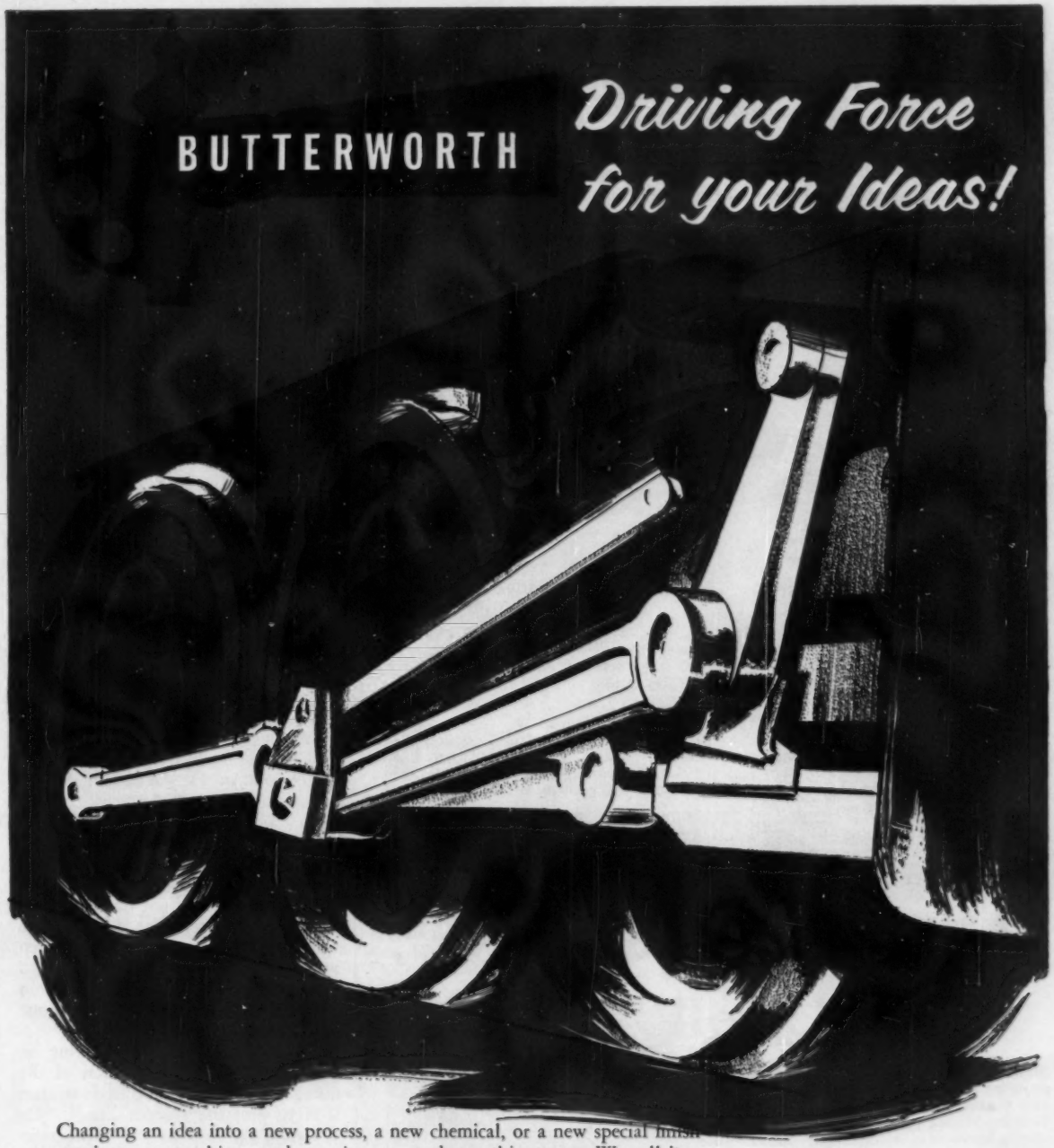

Changing an idea into a new process, a new chemical, or a new special finish requires men, machines, and experience — and something more. We call it Butterworth Developmental Engineering . . . a special ability that puts the driving force of achievement behind your idea . . . and gives you the kind of corporate responsibility you can rely on, from drawing board to production line.

Butterworth now builds 84 standard but diversified machines for the textile industry, from synthetic fiber spinning through dyeing, bleaching and finishing. The men, methods and facilities that created those 84 machines can go to work for you . . . to develop your ideas . . . in complete secrecy . . . and with a single source of high responsibility.

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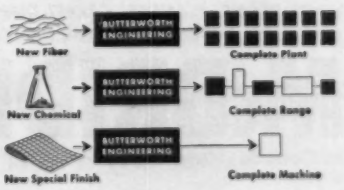

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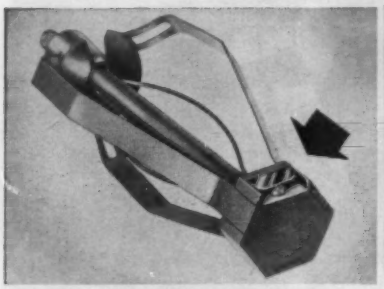
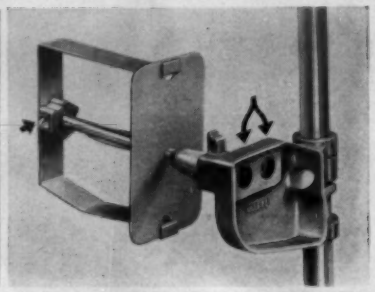


McBRIDE QUIK-CHANGE CONE HOLDER

Quik-Change Cone Holder. Fits over bowed spring spindle—accommodates complete range of cone tapers.



McBRIDE QUIK-CHANGE LARGE DIAMETER TUBE OR PIRN HOLDER

Famous McBride Swing Arm Assembly fits any ⅞" diameter upright. This assembly has recently been redesigned for even greater rigidity and strength.

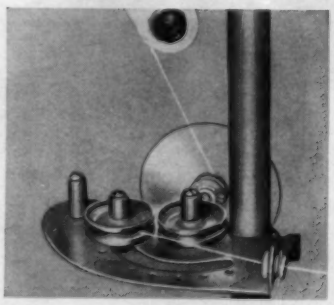
Instant-Stop. Sealed mercury switch gives instant positive action on all yarns from 12 denier nylon to tire cord, etc. Cast-out of individual ends by switch control.

Stop-motion indicating lights provide 3-way control: satisfactory operation—LIGHT OFF, broken end—LIGHT ON, drawing-in position—LIGHT BLINKING. New switching system lights only the light at bank where broken end occurs.

Stop Motion in operating position. Colored button controlling entire bank is on; 3 individual switches controlling 3 drop wires on off position for 3 inactive ends. Note cast-out ends may remain threaded through drop wires.

McBRIDE TENSION-MASTER

McBride Tension-Master. New 3 post tension provides full range of tensions. Adaptable to any diameter upright member, McBride Tension-Master permits yarn to be evenized at the beam.



Write today for details on how to adapt these components to your existing creels.

Let McBride Study Your Warping Situation. You Might Be Surprised With The Costs You Can Save, The Improved Quality In The Warps You Produce.

CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS. COMPLETE ENGINEERING SERVICE IS PART OF EVERY McBRIDE INSTALLATION.

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Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinion appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

MORE ON WEAVING JOBLOADS

Dear Editor:

I was interested in the letters in the June and September issues of TEXTILE WORLD on setting weaver jobloads.

The weakness inherent in any mathematical formula for setting weaver jobloads is mentioned, but not elaborated on, in the statement in the September letter, "The most important element that falls into this category [data impossible to predetermine] is that of interference."

There you have the crux of the whole matter. It is not hard to determine with reasonable accuracy the number of stops to expect on a given weaver's job each hour. But what a formula won't do is to tell which loom will stop next or what must be done to restart it.

The loom the weaver is sitting on may stop from a malfunction of the filling fork, and all he has to do to start it is to pull the shipper handle. Or the stoppage may be 40 looms away with a break-out that will require 15 minutes to repair.

Formulas for setting jobloads are good if the people using them understand their limitations and use the formulas as a base for further calculations and study. The fault comes from eggheads with a lot of theoretical knowledge and little experience who sit in air-conditioned offices and lay out jobloads with a slide rule without taking local conditions into consideration.

CARL BLANTON

Berea, S. C.

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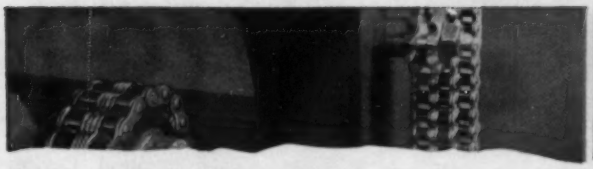
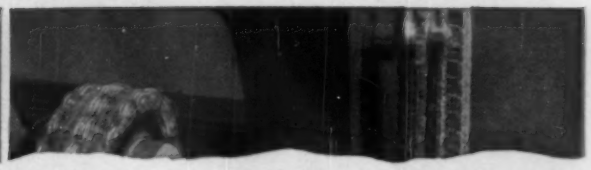
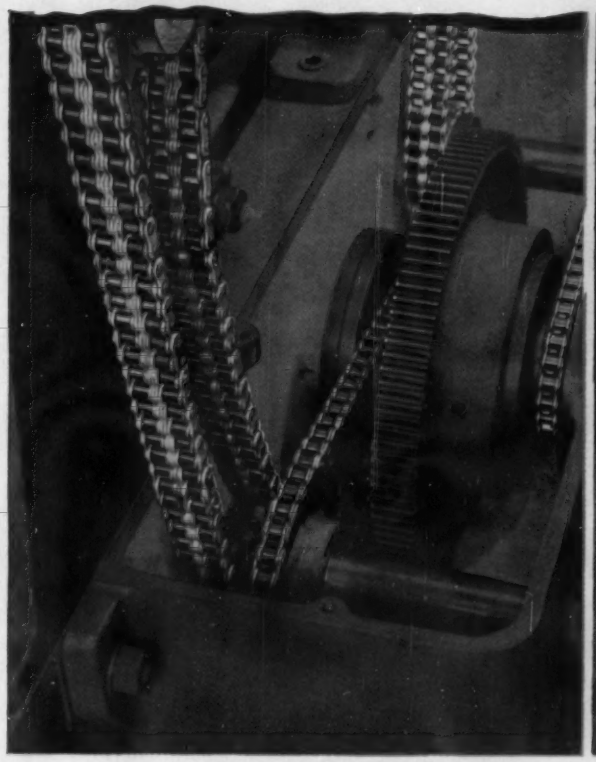
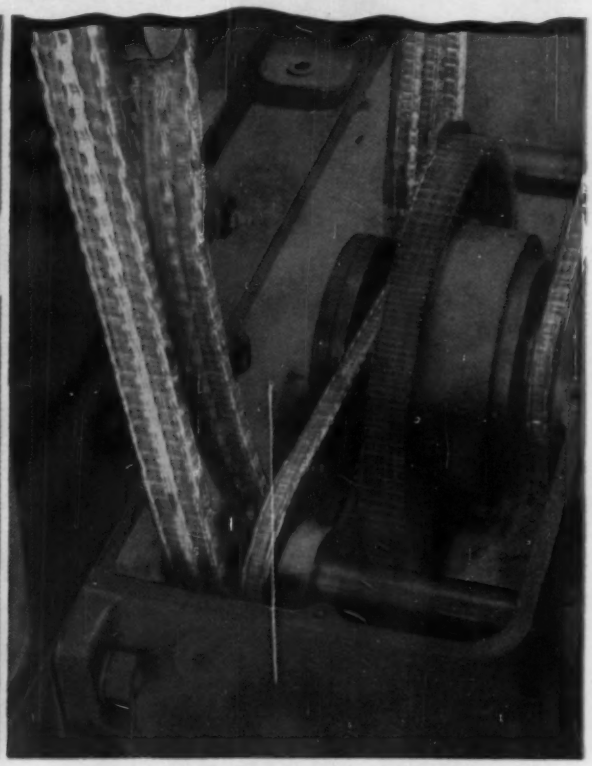




To static strength . . . add *dynamic strength*



RESISTANCE TO TENSILE STRESS is achieved with properly heat-treated, accurately machined side bars made of premium steel and fitted with properly hardened pins, bushings, rollers.



STRENGTH OF CHAIN IN MOTION results from such refinements as pitch-hole preparation, micro-finish of parts, special processing of side bars, pre-lubrication, rigid quality control.

Why LINK-BELT roller chain takes stresses in stride

ON *tough-service* drives and conveyors, Link-Belt precision steel roller chain consistently delivers longer life. That's because its *greater dynamic strength* withstands the starting shock and centrifugal loads of severe operation.

Reports from users prove the effectiveness of Link-Belt's manufacturing extras that add to greater dynamic strength. Shot-peened rollers give greater fatigue life and ability to withstand impact . . . lock-type bushings end a common cause of chain stiffness . . . pre-stressing provides uniform load distribution . . . closer heat-treat control insures uniformity.

For facts, see your nearby Link-Belt office or authorized stock-carrying distributor. 14,643

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THE DEPENDABLE KWG SKEIN DYEING MACHINE

KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.

FOR QUALITY DYEING

WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved **'Ferris-Wheel' performance . . . give you the penetration and evenness of color**—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrink-proofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

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LOOM LIGHT MADE IN LONDON, NOT IN MANCHESTER

Dear Editor:

In the Equipment & Supply News section, page 122, of the August issue of TEXTILE WORLD, you published an item on Meiners Optical Devices Ltd.'s loom light. Unfortunately, you gave the wrong address, listing the company as being located in Manchester.

The correct address is Meiners Optical Devices Ltd., 121 London Wall, London E.C.2, England.

MEINERS OPTICAL DEVICES LTD.
London, England

TEXTILE UNIONS ARE NOT FREE OF CORRUPTION

Dear Editor:

In your editorial "Labor-Union Racketeering" [TEXTILE WORLD, Sept., '57, p. 99] you mentioned that the exposed shenanigans of some textile labor leaders are not as vicious as those in other unions.

Anthony Valente, the president of UTWA, and Lloyd Klenert, secretary and treasurer of the same union, have been accused of misappropriating union funds. What does it matter if the money taken was a few thousand or a hundred thousand dollars? The amount taken was probably dictated by circumstances and not limited by a sense of guilt or by conscience.

As you mentioned, the embezzling officials of banks and business firms are usually convicted in the courts. Convictions and sentences of these officials are based on their proved guilt of the crime, not on the amount of money involved.

How can any right-thinking person condemn an official of a private firm for stealing and then condone the same offense when it is committed by a union official? The money in union treasuries comes from the hard-earned pay of workers, many of whom need the money paid for dues to help pay for life's necessities.

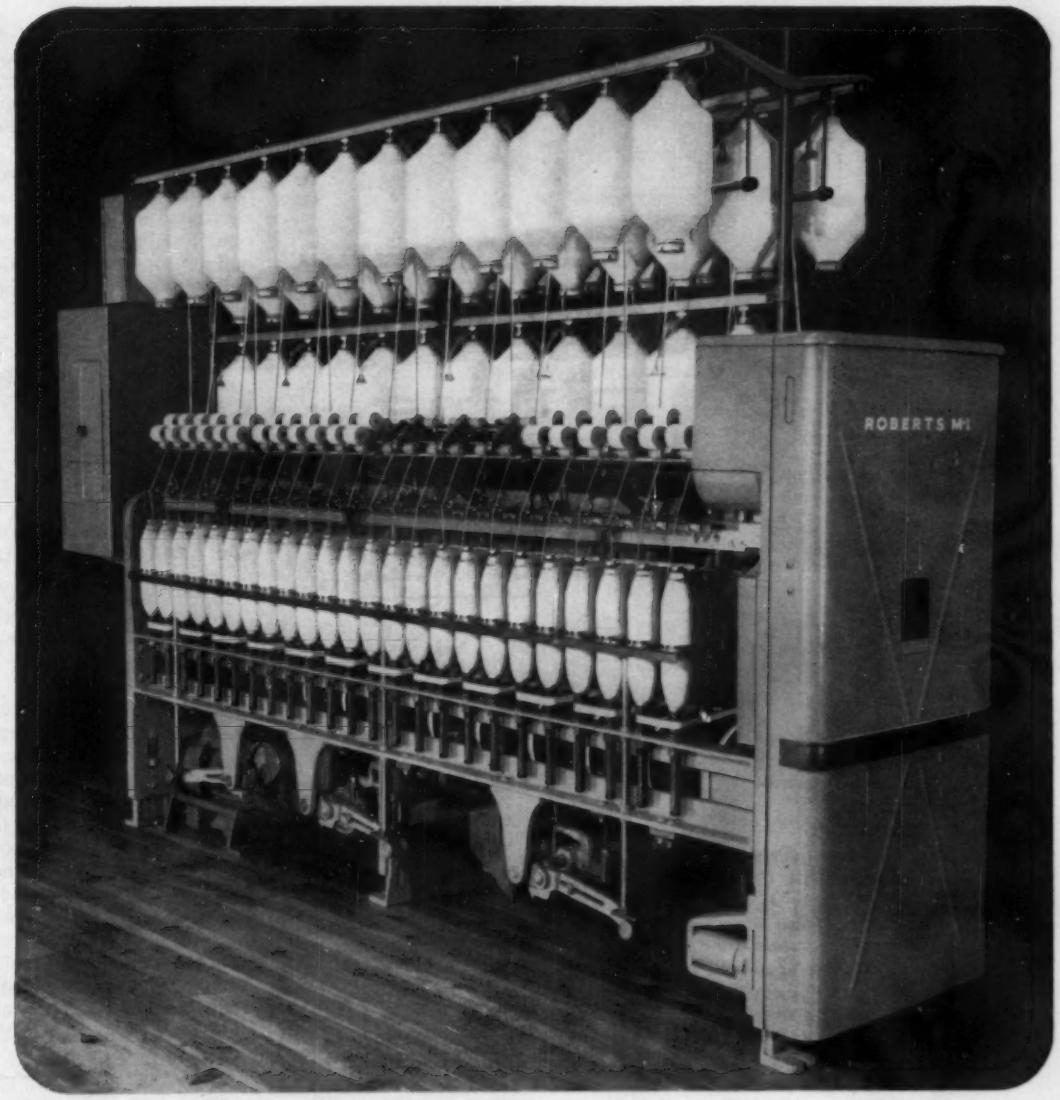
It is high time the unions were reorganized and their management given back to honest members. Even then, the unions and their officials should be subject to the same laws governing other chartered organizations.

A. D. C.
Greenville, S. C.

WRONG NAME WAS USED IN FINISHING-PLANT ARTICLE

Dear Editor:

There is a factual error in your article on the new Carlisle Finishing



ROBERTS SPINNING

ALL NEW—ALL BALL BEARING ROBERTS M-1 SPINNING FRAME

MODERN IN DESIGN

Into the rugged simplicity of the Roberts M-1 chassis has been built all the ball bearing features needed to provide the smooth operation and productivity for today's and tomorrow's production goals. Standard features include:

- BALL BEARING TOP ROLL SUSPENSION
- BALLOON CONTROL ARRANGEMENT
- BUILT-IN UnitVac SUCTION CLEANING
- EXTRA CAPACITY SPINDLES
- FULL BALL BEARING HEAD
- UMBRELLA CREEL
- 45 DEGREE ROLL STANDS
- STEEL BASE RAILS, ROLL BEAMS, RING RAILS
- ADJUSTABLE DRAFT CONSTANT, 500 TO 3000
- TURNKEY ERECTION AND STARTUP

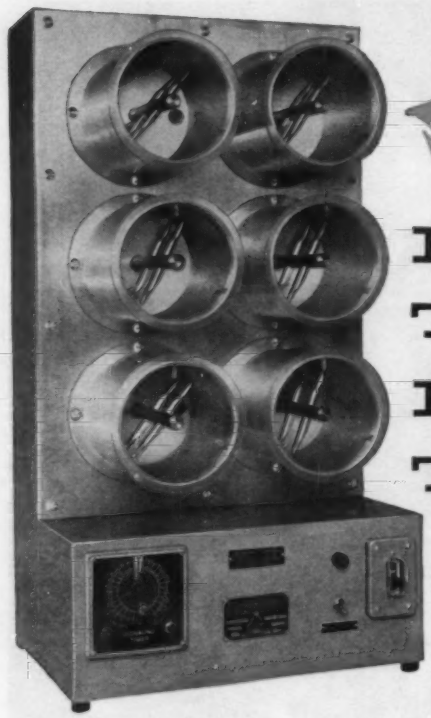
PROVEN IN PERFORMANCE

New Roberts Spinning has been running in the mill since February 1956 and has proven itself not only most economical in initial cost but low in maintenance. One large user with more than 150 frames in continuous production reports that the new Roberts Spinning runs with higher front roll speeds, better yarn quality and substantially lower ends down than the several thousand frames of other makes in operation in their mills.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

For more data, write this page number on Reader-Service card. →



NEW

Random Tumble Pilling Tester

...by Atlas

Atlas Random Tumble Pilling Tester Model PT-6. Other models with four and two chambers available.

A New Laboratory Instrument for Evaluating the Pilling and Fuzzing Characteristics of All Types of Fabrics. Will test up to 18 samples per hour.

Results obtained correlate well with actual end use performance in respect to the number, type and size of pills as well as in surface distortion and general overall appearance.

Duration of tests is controlled by an electric timer which may be set to automatically stop the test at any preselected time from one minute to 30 minutes. In action, specimens are constantly flexed and abraded multidirectionally by being rubbed against the neoprene liner as well as against the other fabric specimens.

Specimens are cut 4 3/16 inches square at approximately a 45° bias to warp and filling direction for woven fabrics or to wales and course direction for knitted fabrics.

Each cylindrical chamber is 5.75 inches in diameter by 6 inches deep. Impellers are 4.75 inches long and rotate at 1200 R.P.M. Powered from 115 V. 50 or 60 Cycle A.C. ordinary plug outlet.

FADE-OMETER®
used all over the world as the standard testing machine for determining the action of sunlight on materials.

LAUNDER-OMETER®
Standard testing machine of the A.A.T.C.C. for color-fastness and bleeding, shrinking, resistance to washing, testing dyes, soaps and detergents.

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Fade-Ometer® • Launder-Ometer® • Weather-Ometer® • Accelerator® • Scorch Tester

Co. plant in your August issue.

On page 80, under "Preparation Is Continuous," the article states, "A two-strand singer-desizing unit gets the goods ready for the Becco-system range."

The process actually in use is the new Du Pont Solo-Matic system; and Becco had nothing to do with the design, installation, or operation. The builder supplied a Becco-type J-box for use as a storage chamber, and this J-box may have caused the confusion.

The Solo-Matic system can be used with any type of storage chamber.

T. E. BELL
Manager, Development & Service
E. I. du Pont de Nemours & Co., Inc.
Wilmington, Del.

WOOL-SHRINKAGE METHODS ARE AVAILABLE UNDER LICENSE

Dear Editor:

I have noted the reference to the Stevenson methods of controlling the shrinkage of wool on page 136 in your August issue.

I would like to call your attention to the fact that the Stevenson methods to which you refer are covered by U.S.A. letters of patent and are made available for use only under licenses by Stevensons (U.S.A.) Inc., which is an affiliate of Stevenson (Dyers) Ltd. of Ambergate, England.

Materials treated by the Stevenson methods, and which by periodic tests in our laboratories meet specific standards of dimensional stability against shrinking, felting, and matting to become washable woolens, are certified

CONTINUED ON PAGE 220

OUR COVER

Photo by Coxe Studios, Greenville, S. C
See Bleaching, Dyeing, and Finishing Section, page 128.

FRANZ MÜLLER

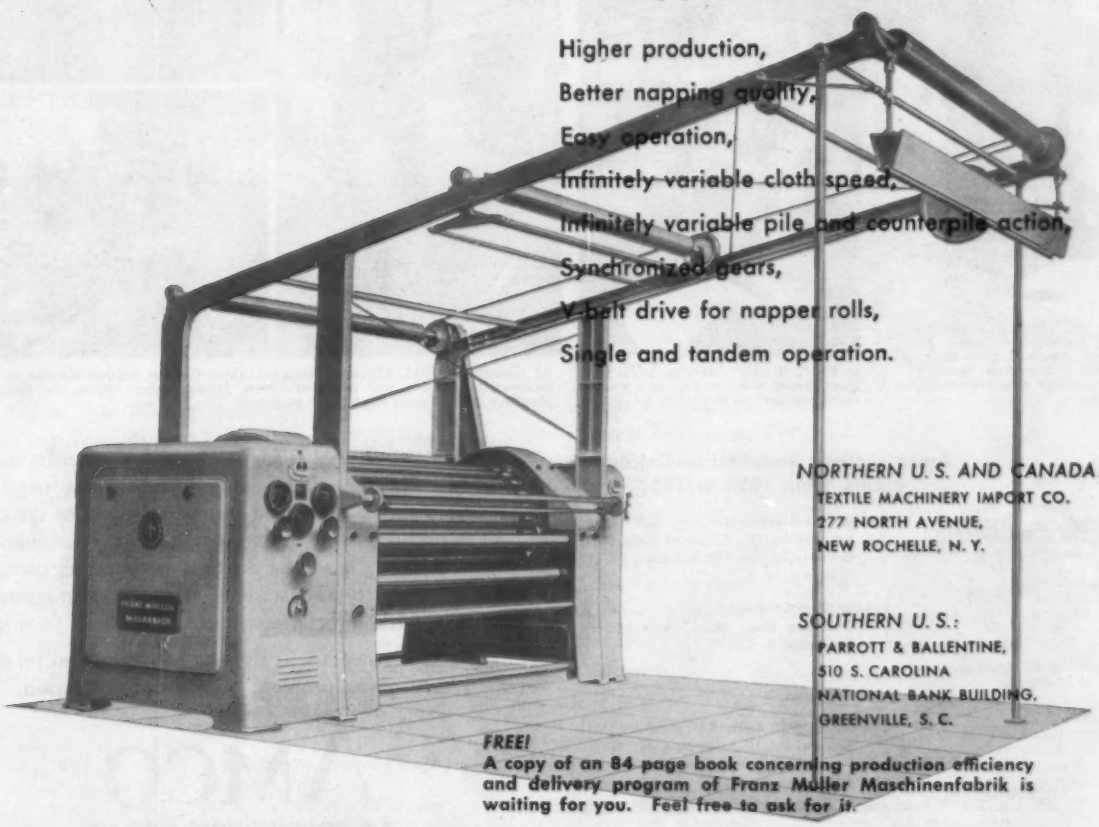
More than 100 years ago

Franz Müller founded the company known today as Franz Müller, Maschinenfabrik, M.Gladbach. He eventually specialized in building textile machines and was the first one to construct a napper of rigid, horizontal design. Constant experiments proved, however, that adopting the planetary principle for the napper rolls produced much better results, and Franz Müller built the first fourteen-roller planetary napper - the proto-type of all similar nappers to follow.

In those days the first planetary napper startled the textile industry. Today the Franz Müller TRI-Napper has conquered the world's largest textile markets.

The FRANZ MÜLLER TRI-Napper offers you -

Higher production,
Better napping quality,
Easy operation,
Infinitely variable cloth speed,
Infinitely variable pile and counterpile action,
Synchronized gears,
V-belt drive for napper rolls,
Single and tandem operation.



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FREE!
A copy of an 84 page book concerning production efficiency and delivery program of Franz Müller Maschinenfabrik is waiting for you. Feel free to ask for it.

FRANZ MÜLLER • MASCHINENFABRIK • M. GLADBACH (West Germany)

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30 YEARS with CHICOPEE

Widely known for its fine textile products . . Chicopee Manufacturing Corporation appreciates that fine products require the best manufacturing equipment and air conditioning systems.

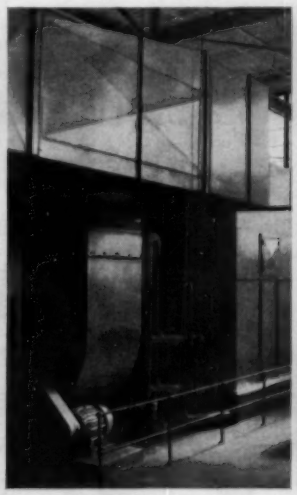
As Chicopee has grown, progressed and modernized, it has relied predominantly on Amco to satisfy each of its air conditioning needs with the system best suited for each particular process.

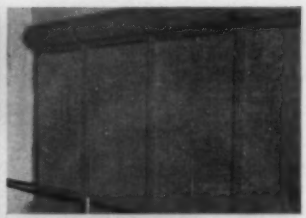
1927

In 1927, Chicopee humidified its Gainesville Cotton Mills with Amco Duplex Humidifiers — high-duty, spray type humidifier with motor-driven fans.

1957

In 1957, *30 years later*, an Amco Dry Duct system was installed in a weave room addition at Walhalla, S.C.





As recently as 1955, Chicopee installed Amco Central Station systems in its Bensenville, Illinois and Milltown, New Jersey plants, where the famous Masslinn Non-Woven Fabrics are produced.

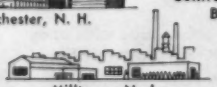
Amco systems installed in Chicopee plants from 1927 to 1957

Chicopee Falls, Mass.

Bensenville, Ill.

Walhalla, S. C.

Manchester, N. H.



Milltown, N. J.

Gainesville, Ga.

Straight Humidification
Bensenville, Ill.; Chicopee Falls, Mass.; Gainesville, Ga.; Manchester, N. H.; Milltown, N. J.

Evaporative Cooling
Chicopee Falls, Mass.; Manchester, N. H.; Walhalla, S. C.

Dry Duct
Walhalla, S. C.

Central Station with Air Washers
Bensenville, Ill.; Milltown, N. J.

Whether your need is for one room or an entire mill, Amco offers air conditioning to meet your requirements. Amco designs and installs all types of systems — humidification; humidification in combination with cooling, as in the ductless evaporative cooling system; unit dry-duct systems; central station systems, with or without refrigeration.

Amco engineers will be glad to advise you on any air conditioning problem — without obligation.

AMCO
AIR CONDITIONING SYSTEMS

AMERICAN MOISTENING COMPANY • CLEVELAND, NORTH CAROLINA
BRANCHES: ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • PROVIDENCE, R. I. • TORONTO, ONT.

This weaver tells us, "These Warner & Swaseys run smooth with no vibration. They're quiet and seem to have been designed to make my work much easier. I'd rather run 10 Warner & Swaseys than go back to the four looms I formerly operated."

Yale Woolen Mills

eliminates filling waste problem,

saves 3½¢ per woven yard

—thanks to their 10 Warner & Swasey—

Sulzer Weaving Machines

● Yale Woolen Mills, 76-year veteran weaver of high grade woolen fabrics, upholstery material and blankets, use over 90 late-model multi-box looms. However, their nucleus of production is from 10 Warner & Swasey-Sulzer Weaving Machines equipped with Filling Mix Units.

Their versatile Warner & Swaseys—operating at 240 picks per minute—outproduce Yale's other equipment 2 to 1. They also have decreased second quality fabric by 20%. Burling and mending costs have dropped from 33 to 50%, depending upon the type fabric.

Why not call in our nearest Field Engineer and have him show how you can cut costs, speed production and improve product quality in your weaving operation.

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YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY

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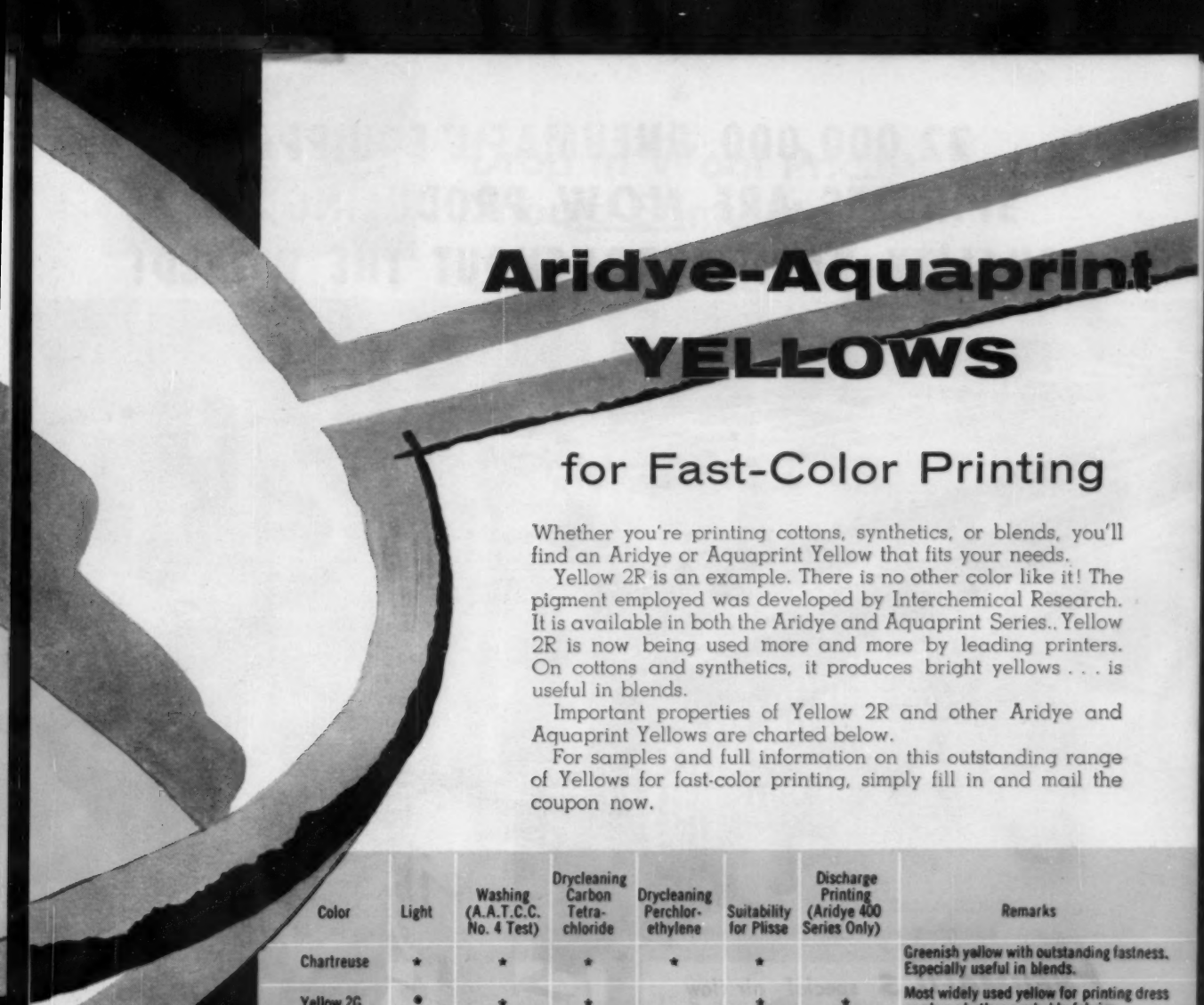
PRODUCTS
SERVICE
Setting the pace...
Aridye COLORS
Aquaprint COLORS



Aridye-Aquaprint YELLOWS

for Fast-Color Printing

Whether you're printing cottons, synthetics, or blends, you'll find an Aridye or Aquaprint Yellow that fits your needs.

Yellow 2R is an example. There is no other color like it! The pigment employed was developed by Interchemical Research. It is available in both the Aridye and Aquaprint Series.. Yellow 2R is now being used more and more by leading printers. On cottons and synthetics, it produces bright yellows . . . is useful in blends.

Important properties of Yellow 2R and other Aridye and Aquaprint Yellows are charted below.

For samples and full information on this outstanding range of Yellows for fast-color printing, simply fill in and mail the coupon now.

Color	Light	Washing (A.A.T.C.C. No. 4 Test)	Drycleaning Carbon Tetra-chloride	Drycleaning Perchlor-ethylene	Suitability for Plisse	Discharge Printing (Aridye 400 Series Only)	Remarks
Chartreuse	★	★	★	★	★		Greenish yellow with outstanding fastness. Especially useful in blends.
Yellow 2G	●	★	★		★	★	Most widely used yellow for printing dress goods and other washable fabrics.
Yellow 3G	●	★	★	★	★	★	Lemon yellow with better fastness to light and drycleaning than Yellow 2G.
Yellow K	★		★	★	★		Mustard yellow for producing prints with maximum fastness to light and drycleaning.
Yellow R	★		★	★			Bright reddish yellow with excellent fastness to light and drycleaning.
Yellow 2R	●	★			★	★	Bright reddish yellow widely used in blends for blotch printing. Has better lightfastness than Yellow 2G.
Golden Yellow RF	●	★	★	★	★	★	Bright golden yellow with outstanding properties. Has better lightfastness than Yellow 2G.

★ outstanding fastness ● meets normal dress goods requirements Tests conducted in accordance with A.A.T.C.C. Standard Methods

Interchemical CORPORATION *Textile Colors Division*

Pawtucket, R.I. HAWTHORNE, N.J. Rock Hill, S.C.

Interchemical Corporation, Textile Colors Division, Hawthorne, N. J.

Please send me samples and complete information on the Aridye and/or Aquaprint Yellows checked below:

ARIDYE

☐ Chartreuse ☐ Yellow 2G ☐ Yellow 3G
☐ Yellow K ☐ Yellow R ☐ Yellow 2R
☐ Golden Yellow RF

AQUAPRINT

☐ Chartreuse ☐ Yellow 2G ☐ Yellow 3G
☐ Yellow K ☐ Yellow R ☐ Yellow 2R
☐ Golden Yellow RF

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COMPANY NAME_____

STREET_____

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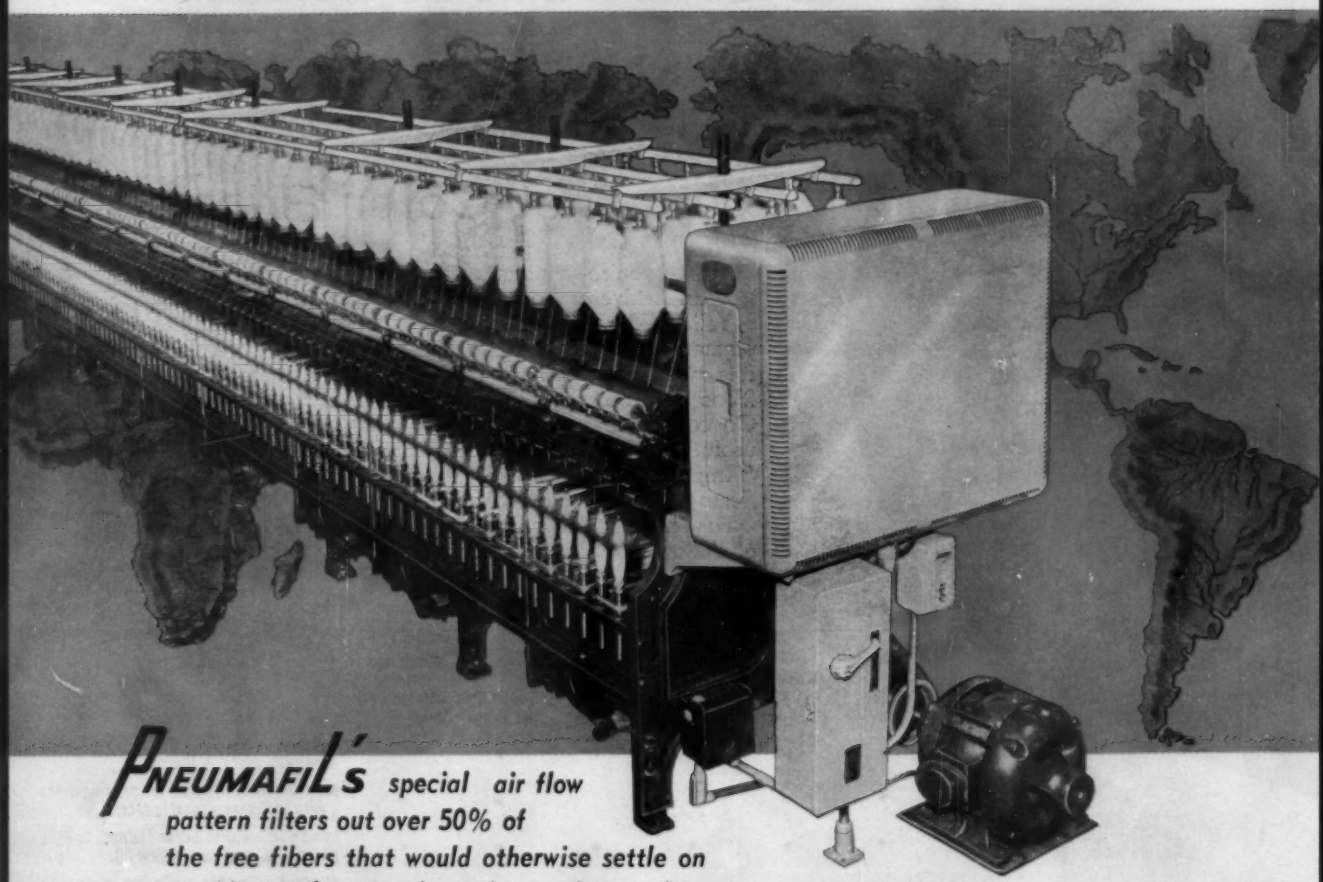
22,000,000 PNEUMAFIL® EQUIPPED SPINDLES ARE *NOW* PRODUCING TOP QUALITY YARN THROUGHOUT THE WORLD!



***PNEUMAFIL'S** special air flow pattern filters out over 50% of the free fibers that would otherwise settle on machinery, floors, and running work—resulting in . . .*

MORE YARN—Higher than ever front roll speeds are possible with Pneumafil equipped frames, because end breakage is drastically reduced. Frame efficiency is substantially increased to give you more yarn production than ever before.

BETTER YARN—A "Pneumafil cleaned" spinning room produces top quality yarn because Pneumafil catches and filters lint out of the drafting area before it becomes slubs, assuring better yarn quality than ever before.

LOWER SPINNING COSTS—Larger spinning assignments are made possible with Pneumafil equipped frames because spinner hands have less ends to piece up, and hand cleaning is tremendously decreased.

When you buy Pneumafil products, you can be sure of getting top value for your money!

PNEUMAFIL UNIT SYSTEM • CENTRAL AIR HANDLING SYSTEM • CENTRAL MATERIAL RECOVERY SYSTEM
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TEXTILE BUSINESS

Textile World

NOVEMBER • 1957

THIS MONTH'S HIGHLIGHTS

Wool Prices Drop

•

Textile Stocks Decline

•

Quota Changes Sought

•

Mill Spending Off

•

Stevens Expands in Wool

•

Military-Textile Needs Cut

•

Auto-Fabric Use Climbs

•

Canadian Market Threatened

•

Union Outlook Clouded

Drop in Wool Prices Should Stimulate Use

Wool prices took a tumble last month as prices were pulled and pushed by moves in Australia, London, and the U. S.

Nobody knows whether the slide has been stopped, but most observers think that lower prices will see an upward trend in wool consumption next year.

A close look at what's been happening proves the old rule that if the price is right, the product has a better chance of selling.

The recent cycle of recovery and decline in mill consumption of apparel wool in the U. S. shows that its competitive price is all-important.

- In 1954, when wool prices averaged $1.84 a pound and competitive man-made staple fiber averaged $1.45 a pound, mills consumed 266-million lbs. of wool.
- The next year wool dropped to $1.53 a pound and man-made staple fiber to $1.41 a pound, and wool consumption rose to 281-million lbs.
- In 1956, wool slipped to $1.50 a pound and man-made staple fiber to $1.20 a pound, and wool consumption bounced up to 297-million lbs.
- Early this year, wool prices started to climb and by late summer averaged $1.70 a pound. At the same time, prices of man-made staple fiber made only a slight recovery to $1.23 a pound. Now, apparel-wool consumption for 1957 has been estimated at 268-million lbs—little better than in 1954.

Since the beginning of the 1957-1958 Australian marketing season in late August, world wool values have dipped about 18¢ a pound.

Asking prices on U. S. domestic spot wool were off about 10¢ a pound. Futures, anticipating still further declines in the price of actuals, showed breaks up to 25¢ a pound.

Most recent influence on wool prices was the increase in the Bank of England discount rate from 5% to 7%. British mills, traditionally the heaviest buyers at the Australian auctions, are expected to buy in smaller quantities and not so far in advance.

•

British and Japanese mills remain a major question mark in the wool markets.

Japan, a major buyer at the preceding Australian auctions, has not come into the market to her fullest extent. Her foreign exchange is low, and the country is trying to bring imports and exports into closer balance.

Along with a softer wool market came higher prices last month for Acrilan and Dynel, two of wool's biggest man-made-fiber competitors.

At this point market observers cannot tell in what direction wool prices will go. Prices stiffened on last month's news of political trouble in the Mid-East and then turned weaker.

But the gap has been narrowed to the point where there could be a stimulating effect on mill consumption of wool.

Textile Stocks Follow Market Trend

Textile stocks generally followed other industrials when the market toppled last month.

The Dow-Jones industrial index slid off 20% from the bull-market highs of mid-July this year but later reflected a stronger tone.

Representative textile stocks also lost ground as the market plummeted, but losses were generally held within a 16% to 21% range.

Here's how three leading textile stocks behaved during the market's latest activity:

Burlington Mills, at 12⅛ in mid-July, fell to 9¾; Cone Mills dropped from 12⅜ to 10; J. P. Stevens slid from 23½ to 18.

•

Burlington's annual dividend rate is now at 80¢, compared with $1.00 a year ago and 76¢ in 1955.

A modest extra payment or restoration of payments to last year's levels might be a possibility next year if conditions improve.

Cone Mills continues at a quarterly 20¢ rate, the same as last year. But this rate is not viewed as too secure, since capital requirements at Cone are likely to remain large.

Stevens has maintained its quarterly dividend at 37½¢. The company looks for further improvement; so its rate should hold over the near term.

Japanese Want Flexibility In Import-Quota Plan

The voluntary quota system for Japanese cotton-textile exports to the U. S. is up for its first annual review next month.

Makoto Kosugi, managing director of the Japan Cotton Yarn & Fabric Exporters Association will be in Washington for preliminary discussions.

U. S. mills have been pretty well satisfied with the quota system so far this year, but the Japanese want more flexibility.

One thing they would like to see is a ban on imports of quota-controlled cotton textiles by way of third countries.

Steps to stop circumvention of the quota system were taken last summer, but the U. S. does not view this problem as its concern.

•

Many Japanese exporters are deliberately stretching out sales to the U. S. so that textile quotas will remain active throughout the year.

In the first six months of this year, cotton-textile exports to the U. S. were below the 40% mark. In that period, only 35-

Sales and Profits Dip In Second Quarter

Second-quarter operations for the textile industry were off 2% from the first quarter of this year but were 1% better than the second quarter of last year.

Sales in the second 1957 quarter amounted to $3,221-million, compared with $3,260-million in the first quarter of this year and $3,176-million in the second quarter of 1956, according to a report of the Federal Trade Commission and Securities & Exchange Commission.

Net profit before Federal income taxes stood at $138-million in the second 1957 quarter, down 8% from the $150-million in the first quarter of this year and down 10% from the $153-million in the second 1956 quarter.

Net profit after taxes was $65-million in the second 1957 quarter, off 2% from the $66-million in the first quarter of this year and down 8% from the $71-million in the second 1956 quarter.

Sales for all manufacturing industries in the second 1957 quarter were up 2% over the first quarter of this year and were 5% better than sales in the second 1956 quarter.

But net profit after taxes for all manufacturing industries in the second 1957 quarter slipped 1% from the first quarter of this year and were 4% less than in the second 1956 quarter.

Wool-Fabric Prices Up

Prices for some types of woolen dress fabrics were raised an average of 5¢ a yard last month.

All-wool piece-dyed dress flannel went up 3% to $1.85 a yard. New prices on wool-nylon mixtures were boosted to $1.72½ and $1.87½ a yard.

An improved market for these fabrics supported the price increase.

Mills point out that between May, 1956, and the middle of this year they were forced to absorb the better part of rising wool costs.

million sq. yds. of cotton fabrics—30% of the 133-million sq.-yd. quota—were shipped to the U. S. And the figure is not expected to rise above 90-million sq.yds. even by year's end.

But the unfilled quota will most likely be made up by a 10% excess of made-up cotton goods.

Quota for the garment category is 122-million sq. yds. (in terms of fabric), but only 40% of this amount reached the U. S. in the first half of the year. There was a big sales spurt in July, August, and September; so exports may hit 130-million sq. yds. by the end of December.

From January to June, leading items shipped to the U. S. included:

Fabrics	Quantity (sq. yds.)	Quota (sq. yds.)
Gingham	13-million	35-million
Sheeting	10-million	50-million
Poplin	4-million	25-million
Yarn-dyed cloth	4.7-million	24-million
Velveteen	750,000	2.5-million

Planned Mill Spending Off in Second Half

Mill expenditures for new plant and equipment this year should total about $400-million, somewhere between the $366-million spent in 1955 and $465-million in 1956.

Actual expenditures in the first half of this year total $225-million. But estimates of the Securities & Exchange Commission and the Dept. of Commerce place second-half expenditures at $172-million. Spending for the third quarter is estimated at $92-million with $80-million for the final quarter.

These estimates are well below actual expenditures by mills in the third quarter of 1956 at $110-million and for the final quarter at $121-million.

But this year's estimates to date have been running behind actual spending; so final figures may turn out to be better than anticipated.

Actual expenditures in the second quarter at $114-million topped estimates by $12-million. And earlier estimates of third-quarter spending at $82-million have been upped to $92-million.

Sales and earnings of textile machinery manufacturers are reflecting the drop in mill expenditures.

Draper's order book, for example, is well below that of a year ago. Saco-Lowell Shops had a net loss of $112,786 for the 39 weeks ended Sept. 1, 1957, compared with a profit of $1,362,977 in the same period a year ago.

But a rise in spending should come next year if mill operations improve as expected.

Right now mill earnings have been disappointing, and tight money does not encourage expansion.

Sheet Prices Raised

Mills raised prices 5% on fitted top sheets last month.

The new rise was forced by higher production costs for fitted sheets. While they represent only a small part of the market, the sales appeal of specialty items like fitted sheets has kept demand high.

•

All sheets as well as towels have been relatively strong this year.

Most mills making bed sheets have been running on a six-day basis for the last two years.

And last month Stevens announced it is increasing production of sheets and pillowcases at its Utica-Mohawk plant by 30% in the next two years.

Cotton-Crop Estimate Off

The estimated size of the cotton crop dropped last month to 12.4-million bales, 2.5% under the 12.7-million bales predicted earlier.

If the latest government estimate holds up, this year's crop will be 7% smaller than last year's 13.3-million bales and the smallest crop since the 10-million bales harvested in 1950.

The drop in estimated production has no bearing on next year's acreage allotment, which was set at 17.4-million acres last month.

The 1958 allotment is the lowest that USDA can set under the law and is the same as last year.

•

Last month's cotton market was a weather affair.

Traders were bullish because of the lateness of the season. Much cotton in the fields was in danger of an early frost.

High-grade cotton is much in demand at advancing prices. Eventual quantity of better-grade cotton in the needed staples will be directly governed by weather conditions in the immediate future.

Protein Fibers— What's Their Future?

Disappointing sales prospects struck at two leading producers of protein-base man-made fibers last month.

• **Virginia-Carolina Chemical Co.,** U. S. producer of Vicara staple fiber from corn protein (zein), was looking for a buyer to take the fiber division off its hands.

• **Imperial Chemical Industries Ltd.,** British producer of Ardil staple fiber, made from ground nuts, has decided to stop producing the fiber.

•

Most other man-made fibers have shown spectacular growth; but with few exceptions, fibers using protein bases have not shared in rising demand to the same extent.

National Dairy Products took a stab at the market some years ago with Aralac, using a casein base. The fiber was a failure and the plant at Taftville, Conn., was closed.

Later, Virginia-Carolina took over the Taftville plant to make Vicara, but the company was never able to operate at anywhere near capacity. (Annual sales of Vicara were running around 2.5-million lbs.) Vicara was never a real moneymaker; so V-C's president Wilson is anxious to sell all or part of the fiber division.

Imperial Chemical says progress at its Ardil plant was disappointing. Ardil was much weaker than other man-made fibers and had to be blended with natural fibers for satisfactory performance.

•

But Merinova, an improved version of Snia Viscosa's original protein fiber Lanital, continues to be successful in Italy and other world markets. Sales of Merinova in the U. S. are estimated at around 2-million lbs. annually.

Courtaulds Ltd., British producer of a protein fiber called Fibrolane, is looking at the U. S. market and will soon be offering the fiber for sale through its U. S. connections.

J. P. Stevens Expands Wool-Fabric Sales

J. P. Stevens & Co., Inc., continues to broaden its wool-fabric operations. In recent months it—

• Bought Forstmann Woolen Co. and its sales agency for $6.4-million, getting a well-established name for top-quality woolen and worsted apparel fabrics, plus a big mill in New Jersey with over 60,000 spindles, close to 500 looms, and a dyeing and finishing plant.

• Bought Clinton Woolen Mfg. Co., Clinton, Mich., for a sum considerably less than that involved in the Forstmann sale, and got a market position in men's apparel and military fabrics plus a slice of automotive-fabric business.

Stevens will make the former Clinton fabrics in its Worumbo plant, Lisbon Falls, Me., instead of in the Clinton high-labor-cost area near Detroit.

•

Stevens is one of the nation's biggest textile enterprises with interests in all major fibers.

But the company's first connections were in wool fabrics when the late John P. Stevens formed J. P. Stevens & Co. in 1899 to sell the products of the M. T. Stevens woolen mills.

The agency quickly expanded by representing cotton mills and later man-made-fiber-fabric mills. From the start, Stevens adopted a policy of acquiring a financial interest in most of the mills it represented.

But while Stevens was building up volume in other lines, it never lost sight of the quality wool-fabric field.

Besides the original M. T. Stevens mills, Stevens has Hockanum and Worumbo, two New England properties long known for better-grade products.

In the south, Stevens has the Hannah Pickett Mills on fancy worsted suitings, the Nathaniel Plant on woolen fabrics, and the Milledgeville Plant on piece-dyed worsted suitings and dress fabrics.

•

Stevens is moving fast to stem further losses at Forstmann.

In the six months ended June 8, 1957, Forstmann's sales were $9.3-million but there was a net loss of $1.8-million. And the loss would have been greater if the company had not switched its inventory-accounting system for raw materials to a lower-of-cost or market basis.

Already Stevens has stopped spinning and weaving operations at the former Forstmann mill, but the dyeing and finishing plant will continue to operate. Forstmann fabrics will be made in other Stevens plants.

Forstmann and Clinton sales volume, estimated at around $20-million a year, should push Stevens' annual wool-fabric business toward $90-million, or about 22% of Stevens' total sales volume.

Stevens' wool-fabric volume has climbed to a top position for quality goods, but actual sales figures are far behind those for Burlington Mills with wool-fabric sales estimated at close to $150-million for 1957.

Military-Textile Needs Cut by Economy Drive

The hunt for economy in government is bound to affect military-textile purchases.

It may take several months to find out what's available in terms of procurement dollars, but it appears certain that textile and clothing needs will edge downward.

News of Sputnick brought irresistible pressure to speed up the missile program. But this development means further curtailments almost certainly will come in military spending on manpower, certain types of naval vessels, nonballistic missiles and manned aircraft.

Already a more-realistic, economical defense program is emerging. Improvements in supply procedures will likely reduce both the number of items and the quantities carried.

The Defense Department is taking a new look at its procurement schedules all along the line and is pushing stretch-outs when practical.

Textile procurement is now under a single-management operation, with the Military Clothing & Textile Supply Agency in Philadelphia in complete charge of all requirements.

●

Cutting into future military-textile needs are these factors:

- Personnel has been clipped by 100,000, and an additional 300,000 slash has been hinted.
- MC&TSA, functioning like a wholesaler, must reduce its inventories. This action means the agency will be selling $250-million worth more of clothing and other textile items than it will buy in the next two years.
- The Administration has taken steps to curtail all types of defense spending to a level of $38-billion, down from the annual rate of $40-billion it was running a few months back.

Already the Army has postponed to Nov. 15 the date when its men must buy their new green uniforms so that those coming under the 100,000-man cut won't have to get theirs unnecessarily.

●

Best estimates to date put military-textile procurement at $100-million for the next fiscal year while sales to the services will run around $400-million.

And in the next few years sales may climb to $500-million annually as a result of MC&TSA's effort to cut bulging inventories further.

Biggest fiber loser to government economy would be cotton.

Consumption of cotton delivered to the military forces in 1956 totaled 45-million lbs., compared with 6-million lbs. for man-made fibers and 4.9-million lbs. for wool.

In the first quarter of this year the military took 20.6-million lbs. of cotton, 2.1-million lbs. of man-made fibers and 4.4-million lbs. of wool.

Tire Sales to Increase

Tire-yarn producers were encouraged last month by an optimistic report that tire dealers would be selling 80-million passenger tires a year by 1967.

This 45% increase over the next 10 years was forecast by H. E. Humphreys, Jr., chairman of U. S. Rubber Co.

Bus casings will add another 11-million units to dealers' 1967 volume.

This year's replacement tire business will hit a record level of 56-million units, according to industry estimates.

And predictions are that next year's replacement sales will increase to around 59-million units.

New Farm Plan for Cotton?

Prospects are good that a new farm program for cotton will be passed next year and for one big reason—1958 is an election year.

Sec. of Agriculture Benson indicated last month he would drive hard to get discretionary authority to cut price support for cotton.

Congress will be urged to pass legislation eliminating rigid formulas written into the farm laws, and easing up on acreage controls.

But Congress will not be in a position to pass cotton legislation without giving consideration to other agricultural products. And ill feeling between different farm groups has not subsided.

Underwear Sales Brisk

Activity spurted in the winter-underwear market last month.

Substantial sales were reported on all types of goods with prices holding firm.

Thermal underwear, a fairly recent newcomer, was moving in greater volume than a year ago.

Most retailers regard thermal underwear as a strong factor in 1957-1958 sales.

Auto-Fabric Use Climbs

Automotive-fabric consumption for this year should top last year's levels.

So far this year passenger-car production has been running about 7% ahead of last year.

Production for the full year is expected to approach 6.2-million units, compared with 5.8-million units in 1956. But both figures are well below the record total of 1955, when 7.9-million units were made.

Prospects for automobile sales in 1958 are obscured by two factors—the uncertain outlook for the economy as a whole, and the difficulty of measuring consumers' intentions regarding the purchase of 1958 models.

But last month leaders in the car industry were freely predicting another banner year in 1958 with sales of about 6-million cars.

All automobile companies have now completed their changeover operations and are going full blast on the new models.

•

Mills making automotive fabrics are keeping a close watch on trends in Detroit.

The automobile industry looks to its 10 leading series of cars as a barometer for the rise or fall of total sales in 1958.

The Chevrolet Bel-Air topped all others in unit sales during the past model year, accounting for 715,000 units, or 11.53% of the industry's 6.2-million volume.

Ford also scored with its two Fairlane models; together they aggregated 13.15% of total volume.

The consumer remains consistently economy-conscious, and medium-priced cars are giving serious competition to top-price models.

Ford's Fairlane, Chevrolet's 210, and Plymouth's Savoy together accounted for close to 25% of the industry's 1957 model year.

Regardless of shift, these cars are the bellweathers. As they rise and fall, so will the rest of the market.

Canadian Market Threatened

Textile exporters with a stake in the important Canadian market had their fingers crossed last month.

A three-cornered hassel over trade between the U. S., Canada, and Britain is developing.

At jeopardy could be some of the U. S. mills' Canadian market of 230-million yds. of cotton and man-made-fiber fabrics a year—over 40% of the U. S.'s entire fabric-export market.

Trade problems between the three countries are becoming more complex.

Last summer Canada's new conservative Prime Minister, John

Print-Cloth Prices Sag

A new postwar low hit prices of basic cotton print cloths last month.

Continued slow trading dragged the key 80-square construction down to 17½¢ a yard, for a decline of ½¢ a yard from the previous month.

The 64x60 print cloths eased down from 13½¢ a yard to 13¢ a yard.

But gray sheetings, represented by the key 56x60's, held unchanged at 18¢ a yard.

Buyers were still not committing themselves on forward orders, knowing that there is an oversupply of goods awaiting prompt delivery.

Inventories have been rising all year in spite of sporadic efforts to trim mill production.

There was more talk last month of cutting down mill output, but most observers believed any such action would be piecemeal rather than concerted.

New Nylon Carpet Staple Broadens Styling Potential

New dull and semidull nylon carpet staple is helping to push the fiber's use in carpets.

Last month Du Pont announced a new dull-luster nylon carpet staple, expected to broaden the styling possibilities for nylon carpeting.

Industrial Rayon, already offering full-dull nylon carpet staple, reports an expanding market.

And American Enka, successful with bright nylon carpet staple, has its eye on the full-dull market.

•

Most of the current production is going into tufted carpets using nylon staple spun on a modified system. But woolen-system nylon yarns are being used in increasing quantities, mostly in woven carpets and in patterns where better yarn coverage is desirable.

G. Diefenbaker, suggested that 15% of Canada's trade with the U. S. might be switched to Britain.

And last month matters came to a head after a series of trade meetings between Canada, Britain, and the U. S.

Textiles are in between and could get tossed either way in a trade for bigger game.

Pressure is building up to reduce U. S. textile shipments to Canada, particularly cotton goods, which form the major proportion.

•

Here's what's been happening in recent months—

- Shipments of U. S. cotton goods to Canada jumped from 107-million yds. in the first half of 1956 to 120-million yds. in the first half of this year.
- The share of the domestic market held by Canadian cotton mills sank to a record low of 44% in the second quarter of this year.
- Imports from Britain have remained fairly steady, while imports from India and Japan have dropped off slightly.

Canadian mill owners are clamoring for more protection— would like to get a bigger slice of the home market.

A complete investigation into Canada's textile tariff structure has been ordered by the Canadian government, with public hearings scheduled for the immediate future. But political pressures still confuse the issues.

Union Outlook Clouded

The AFL-CIO's Southern drive for membership ran out of steam this year and is not likely to pick up much in 1958.

- A sound thumping at Burlington Mills, prime union target, was a bitter pill for the union to swallow.
- Revelations of the Select Senate Committee investigating union abuses has given labor generally a black eye; may bring stiffer labor laws.
- A battle is shaping up between factions of the United Textile Workers of America-AFL and the Textile Workers Union of America-CIO.

TWUA's campaign to organize Burlington Mills had been sputtering along for two years. The union petitioned for seven elections at Burlington. It lost two elections and withdrew the petitions for the other five. Another union, the Hosiery Workers, also withdrew.

TWUA was not mentioned in the Senate hearings, but its organizing problems are multiplied by the misdeeds charged to UTW president Anthony Valente and former secretary-treasurer Lloyd Klenert.

In spite of UTW dissension, it looks as if Valente will try and carry on as president. TWUA president William Pollack is driving hard to build his union's reputation for keeping a clean house.

Valente's moves have brought sharp criticism from Pollack, and the two are squaring off for a tussle that could play havoc with organizing efforts in 1958.

Between 7- and 10-million lbs. of nylon carpet staple were used last year. Best guess is that this year's consumption will jump to between 12- and 15-million lbs. Consumption in 1958 might nudge 25-million lbs.

Price restricts nylon carpet staple to about 30% of the market, at present. Yarn prices ranging from $1.22 to $1.24 a lb. put the staple in the $9.95-sq.-yd. class of carpet.

Textured filament nylon has also crashed the carpet field and expansion is anticipated in this area.

Trade Bill To Be Revived

The Administration will try again to get the approval of Congress for U. S. membership in the Organization for Trade Cooperation.

So next year the textile industry's worry over OTC starts all over again.

This is the third try for OTC, rejected by Congress the last two years running.

Rayon and Acetate Up

Rayon and acetate shipments in the first nine months of this year were up 1% from the same period last year.

Shipments totaled 839.4-million lbs. this year, compared with 831.9-million lbs. last year, *Textile Organon* reports.

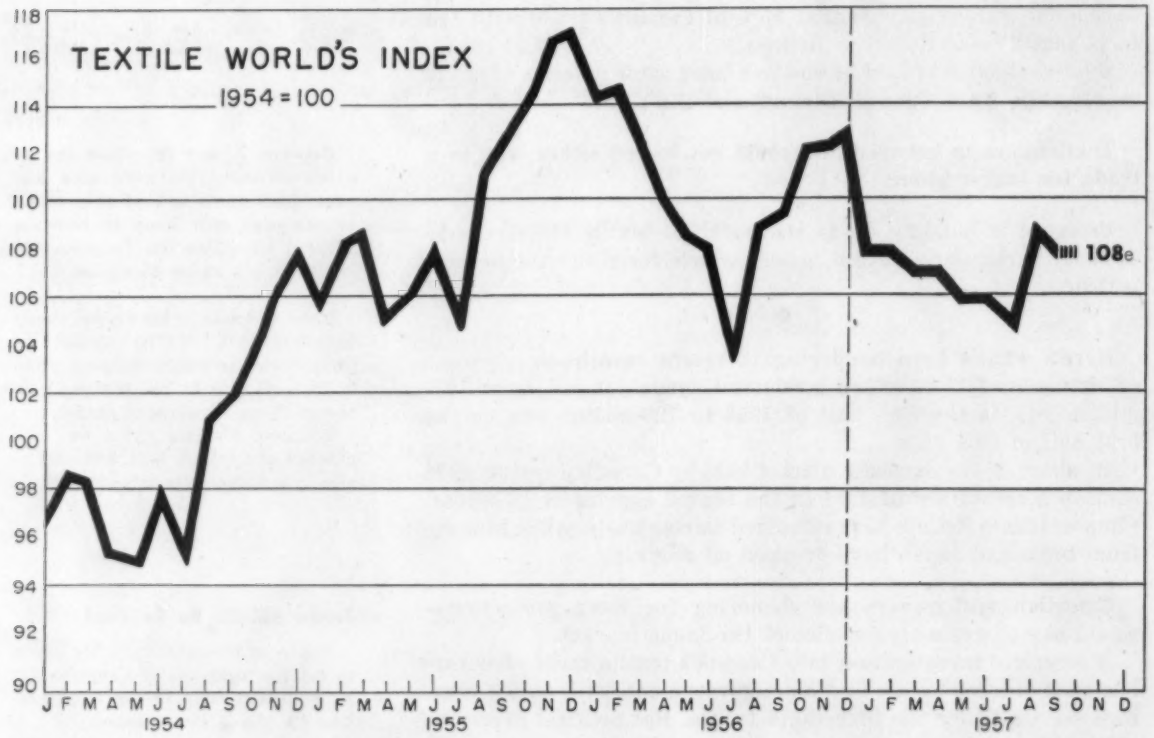
Carded-Twill Prices Cut

Mills cut prices of carded twills for work clothes by about 6% last month.

Reductions were made possible through lower prices for gray goods.

The 41-in., 8.5-oz. carded twill has been cut from 62¢ a yard to 58¢ a yard. Other constructions followed a similar range of price reductions.

Good sales volume followed the price cuts.



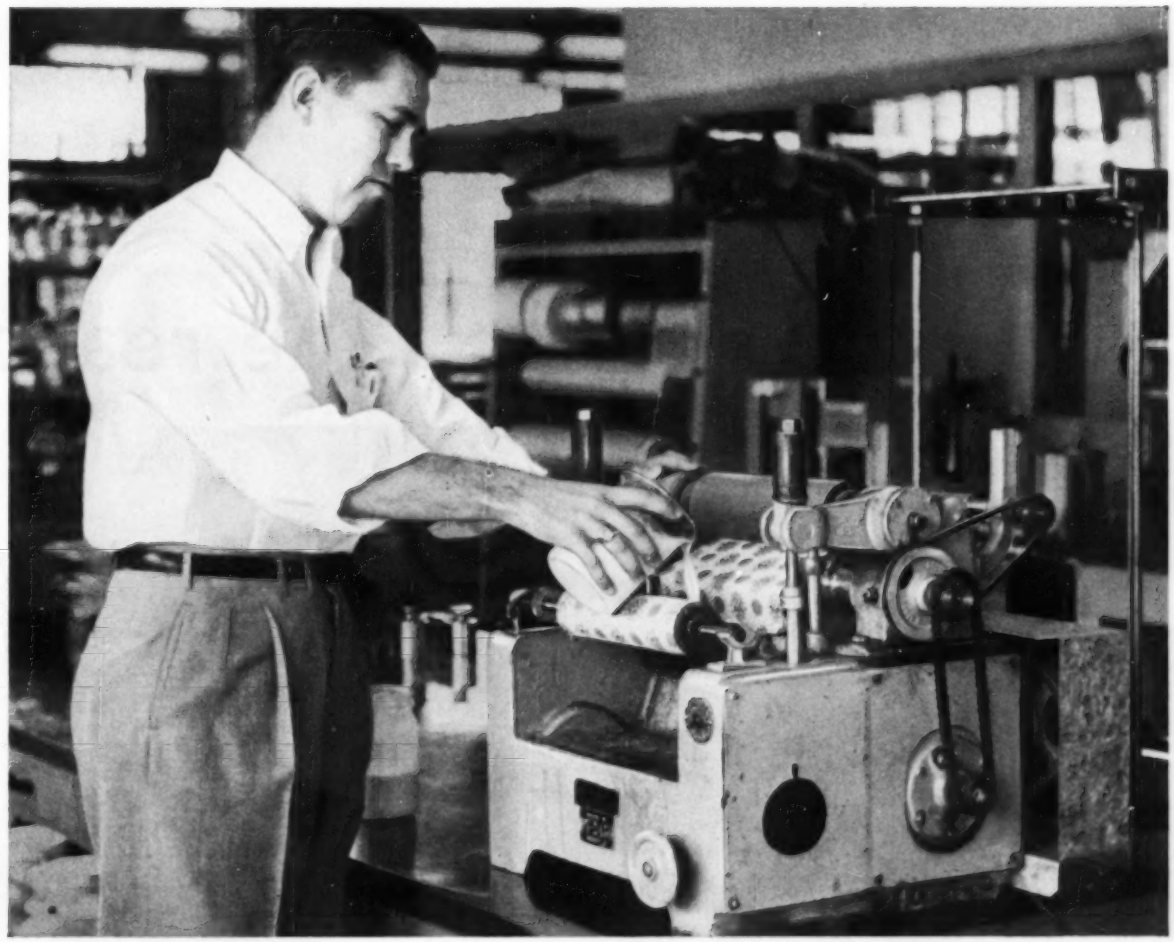
Index of manhours worked in the textile industry adjusted for changes in productivity

Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954 = 100)	**108**	**108**	**112**
Employment (thousands) B.L.S	998.9	1002.1	1046.8
Production Workers (thousands) B.L.S	909.1	912.0	955.5
Weekly Earnings B.L.S	$58.35	$58.65	$56.99
Hourly Earnings B.L.S	$1.50	$1.50	$1.45
Weekly Hours Worked B.L.S	38.9	39.1	39.3
Production Index (1947–1949 = 100) F.R.B	100	100	103
Wholesale Price Index (1947–1949 = 100) B.L.S	95.4	95.4	94.8
Manufacturers' Sales (million $) Commerce	1,074	1,089	1,128
Manufacturers' Inventories (million $) Commerce	2,650	2,642	2,608
Inventories to Sales Ratio	2.47	2.43	2.37
Exports (million $) Commerce	110.2	134.3	62.7
Imports (million $) Commerce	86.2	73.7	81.6
Stock Price Index (1941–1943 = 10) Standard & Poor's	19.81	20.90	23.14
Failures (number) Dun and Bradstreet	5	5	8

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947–1949 = 100) F.R.B	144	145	144
Consumer Prices (1947–1949 = 100) B.L.S	121	120.8	116.8
Wholesale Prices (1947–1949 = 100) B.L.S	118.0	118.4	115.5
Population (millions) Census	169.0	168.7	165.9
Unemployment (thousands) Census	2,552	2,609	1,998
Employment (millions) Census	65.7	66.4	66.1
Personal Income (billion $) Commerce	346.5	346.8	331.1



Want to add "plus" to your fabric quality?

You're probably already working toward improved washability, better wearability and greater wrinkle-resistance—the "plus" qualities in ever-increasing demand in today's market. Or maybe you're seeking to improve body, drape, strength or dimensional stability. You're well on your way to solving any of these problems—when you start with a latex by Goodyear.

There are four basic latices to choose from: CHEMIGUM (nitrile rubber), PLIOLITE (styrene/butadiene rubber), PLIOLITE (styrene/butadiene resin) and PLIOVIC (vinyl resin). They are available in a range of monomer ratios, solids contents, particle sizes and types of stabilization. What's more, they can be used alone, in various combinations with each other—or as modifiers of your present materials.

Result: You're sure to find just the Goodyear latex you want—to do the kind of job you want done – the way you want to do it – and on standard equipment.

Remember, too—Goodyear always backs its latices with all the technical help you need to make the most of them. Your nearest latex compounder is the man to see for the complete CHEMIGUM LATEX, PLIOLITE LATEX or PLIOVIC LATEX story. Or write for details and the latest *Tech Book Bulletins*, available at Goodyear, Chemical Division, Dept. K-9433, Akron 16, Ohio.

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DIVISION

COATINGS
DEPARTMENT

Chemigum, Pliolite, Plio-Tuf, Pliovic—T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

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High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries

Here's the reason

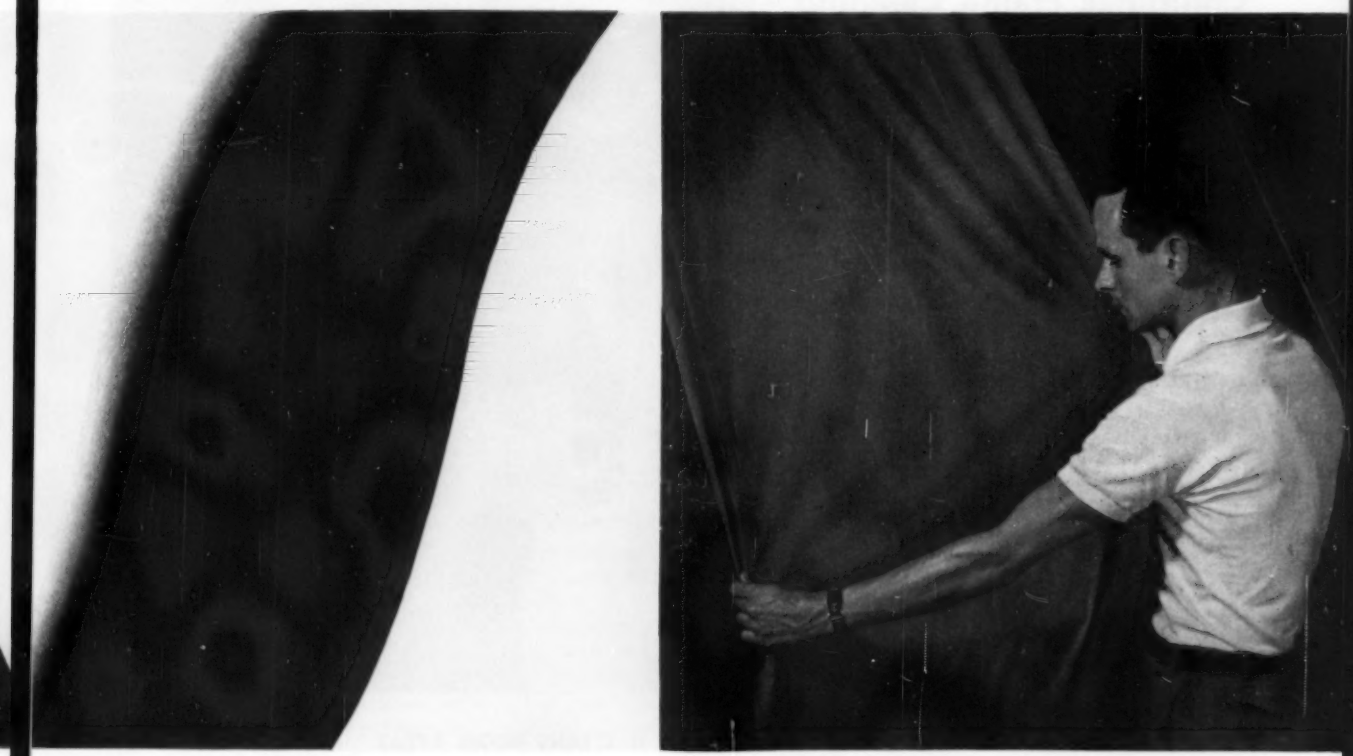
Specking of ordinary unimproved vat dyes.
Uniformity produced with National Carbanthrene® Dyes.

It's simple! Vat dyes satisfy the young modern's desire for easy-care fabrics!

And to help you meet the demand, manufacturers have made remarkable progress in producing *better and easier to apply* vat dyes.

National's Carbanthrene® Dyes have been in the forefront of this evolution as a result of new and unique manufacturing methods that were developed by intensified National Aniline Research.

for the upsurge in vat dyes!



Typical of the cleaner, brighter dyeings produced with modern, fine-particle Carbanthrenes® are the extremely level, speck-free shades obtained in padding. In addition to uniformity and reproducibility, dye yields realized are frequently greater. Processing is less troublesome. There are fewer seconds. And dyes do not tend to agglomerate in storage.

Samples of these extraordinary, American-made dyes are available for your inspection. Your National Aniline representative will gladly demonstrate the superiority of the Carbanthrenes® in your processing.

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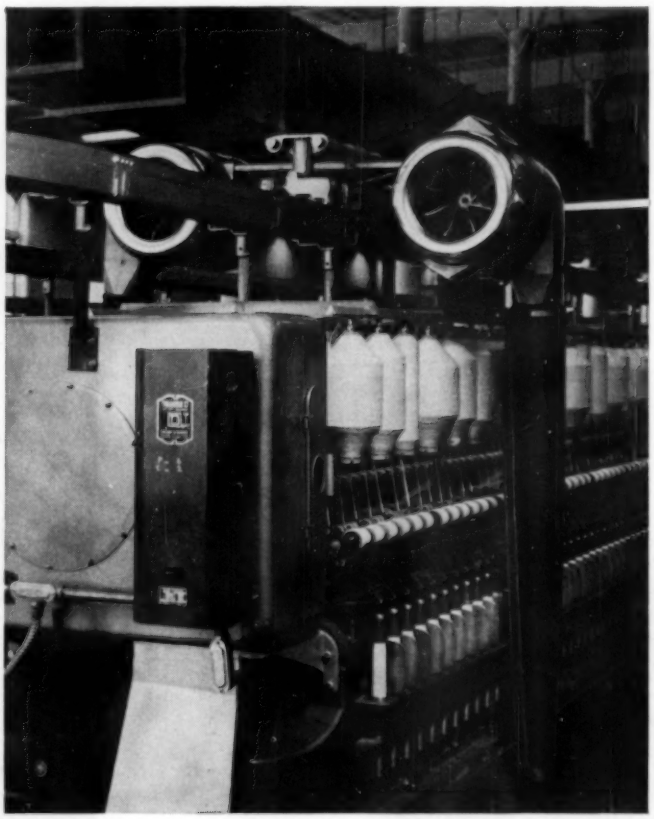
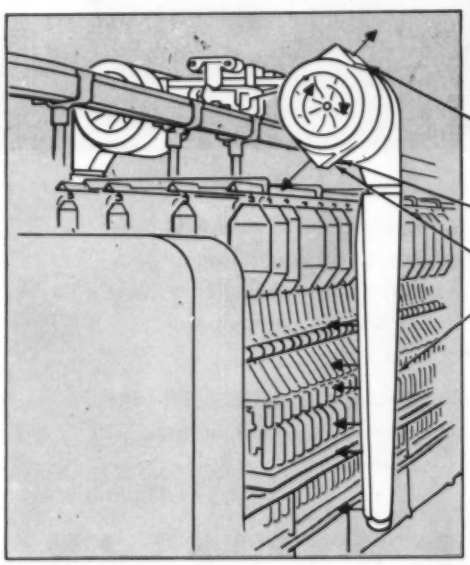
Most advanced way to CLEAN LINT AND FLY FROM FRAMES, WALLS and CEILINGS

Bahnson CROSS-JET Cleaner Combines Frame Cleaning and Room Cleaning in One Compact Unit ... Cleans Itself, Too.



- **CLEANS MORE FRAMES FASTER**
  Balanced design of unit permits higher speed track performance.
- **KEEPS CLEANING COSTS DOWN**
  Compact unit design has fewer component parts, requires less maintenance.
- **LOWEST HEADROOM REQUIREMENT**
  Minimizes interference with air conditioning ductwork.



- **HOW IT CLEANS ROOM AREAS**
  4 rotating nozzles clean walls, ceilings, columns, light fixtures, overhead installations.
- **HOW IT CLEANS ITSELF**
  4 rotating nozzles clean Cross-Jet unit and track.
- **HOW IT CLEANS FRAME**
  4 rotating nozzles completely clean creel section. 2 long flexible nozzle extensions having multiple openings with separate air streams thoroughly clean all frame areas from top to bottom, under frame too.

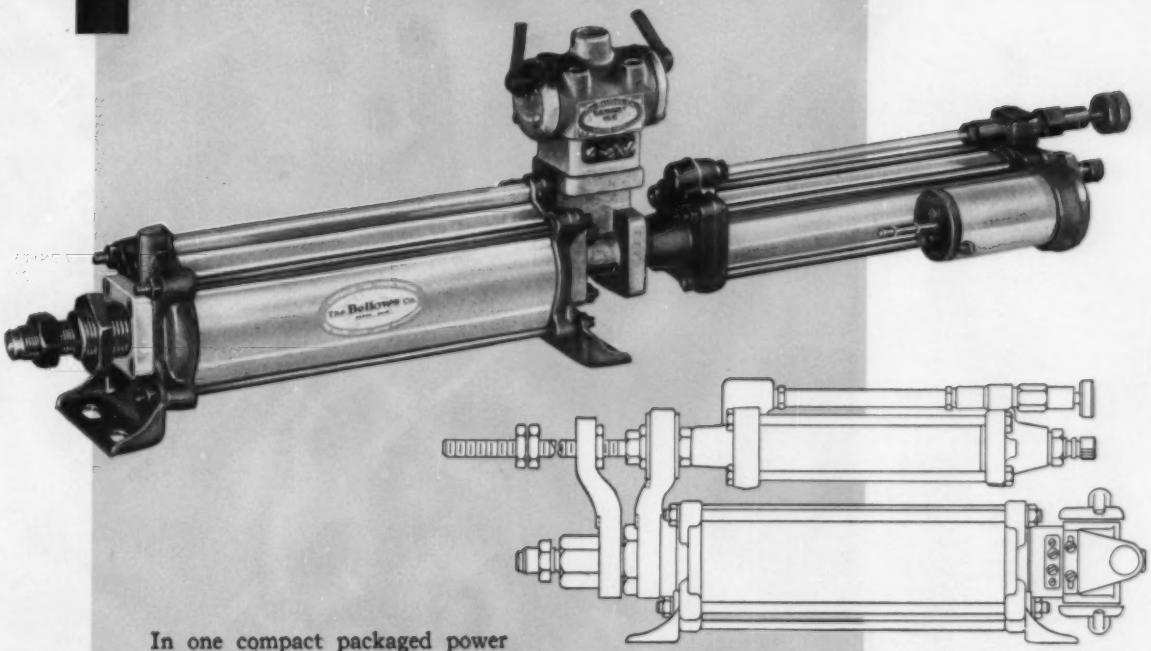
Bahnson COMPANY
WINSTON-SALEM, N. C.

Let a Bahnson representative explain the advantages and application of the Cross-Jet Cleaner for your needs.

AIR CONDITIONING HUMIDIFICATION VACUUM COLLECTION CLEANING CREELS

This AIR CYLINDER features—

1 **BUILT-IN *HYDRAULIC CONTROL***
2 **BUILT-IN *ELECTRIC CONTROL***
3 **BUILT-IN *SPEED CONTROLS***



In one compact packaged power unit are built-in controls to cover every phase of air cylinder operation. Built-in hydraulic control of piston rod movement gives the smoothness characteristic of hydraulic operation, yet retains the speed and flexibility of air power. Built-in electrically controlled directional valve permits quick, positive, push button remote control, or easy electrical synchronization with other machine elements. Built-in speed controls permit exact control of piston rod speed in either or both directions.

This combination of Bellows Air Motor and Hydro-Check is available in five bore sizes: 1¼", 1¾", 2½", 3⅝" and 4½" in standard stroke lengths up to 18".

Here is air cylinder power at its best—fast, flexible, safe, and smooth.

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TWO MOUNTING STYLES

The Bellows Air Motor and Hydro-Check (Model HCB-EM) is available arranged in tandem as shown above, or in parallel, as sketched.

●

Combination units of Air Motor and Hydro-Check are also made with any one of six other Bellows directional valve arrangements; and, of course, Air Motors and Hydro-Checks are available as separate units.

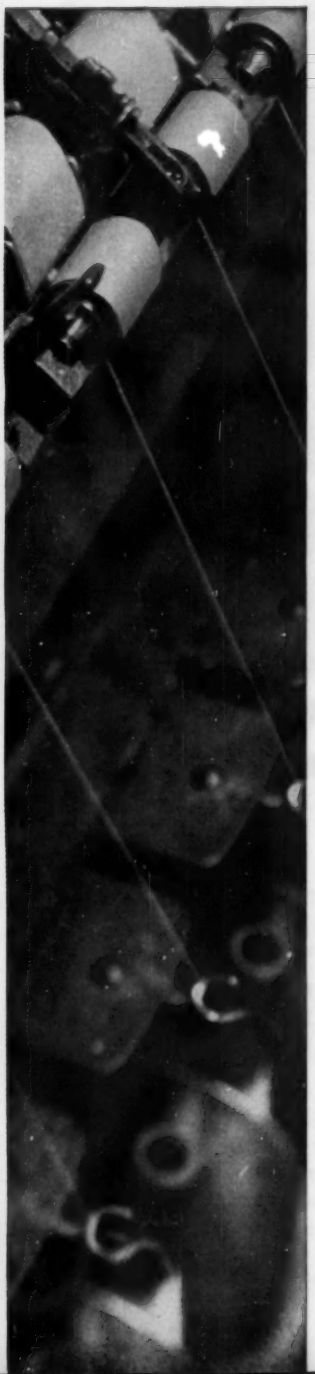
Controlled Air-Power

FOR FASTER, SAFER, BETTER PRODUCTION

1381-A

Why new Dayco AP 664 Aprons improve yarn uniformity

. . . give trouble-free drafting



Smoother operation is the reason new Dayco AP 664 Aprons draft more uniform yarn, either natural or synthetic. Newly developed, highly flexible compounds eliminate drag around the nose bar, even on the latest super-draft systems.

Semi-gloss pink inner surface gives far lower coefficient of friction. This reduces chatter – indication of jerky, uneven motion around the nose bar. Non-stretch, pliable cord body assures maintenance of uniform apron tension for surer drafting control.

All through the long life of the new Dayco Apron, the compounds in the light blue drafting surface maintain just the right coefficient of friction for improved fiber alignment. Special ingredients prevent lint from coating the surface, therefore the drafting surface always remains the same.

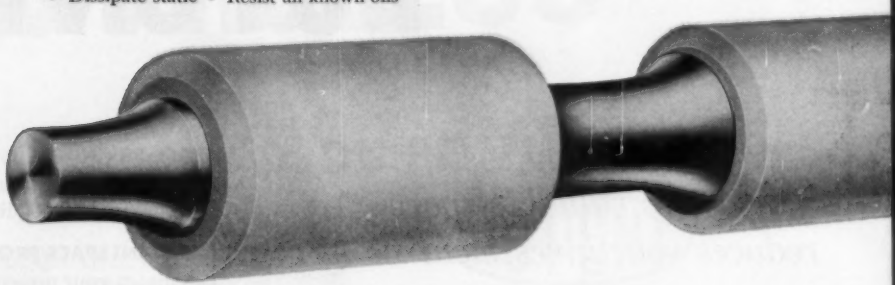
Compounded of materials which stubbornly resist chemicals or oils, Daycos instantly resume quality drafting after shutdowns. They are not affected by heat or humidity, nor will they take a permanent set. Flipped and broken aprons are a thing of the past. Dayco Aprons are available for both single and double apron systems.

Your Dayco Representative will be in soon to give you full information on how new Dayco AP 664 Aprons will improve the quality of every yarn. Or write The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Bldg., Greenville, S. C.

For even greater drafting control—

New Lap-resistant Dayco EW 661 Cots offer these advantages:

- Stay dry and solid despite heat and humidity
- Dissipate static • Resist all known oils



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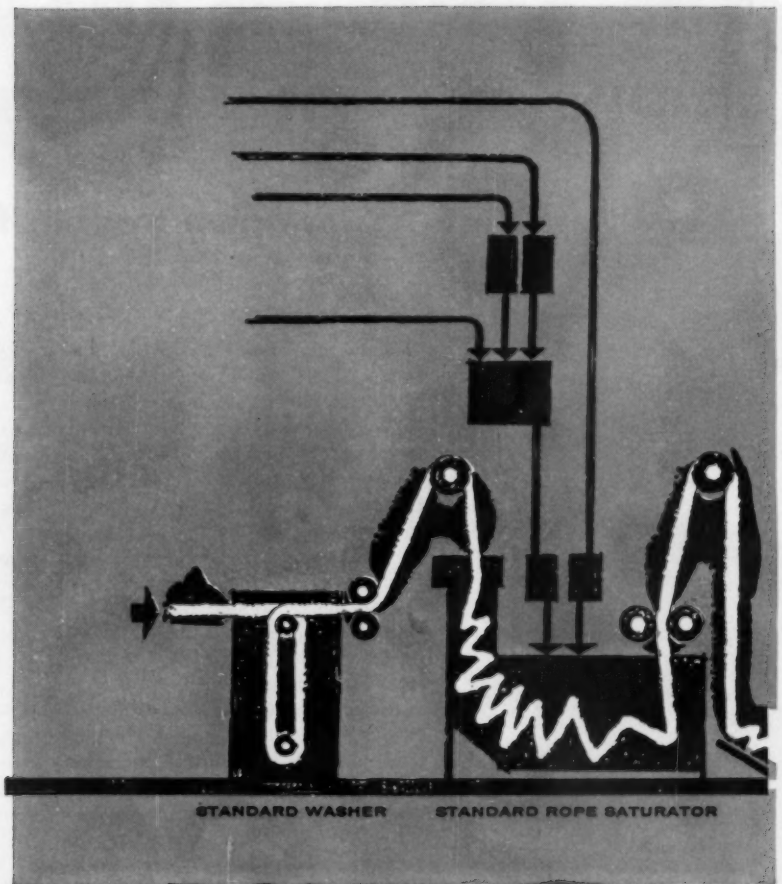
Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

Here's the most advanced single-



DU PONT SOLO

It cuts operating costs, saves valuable space, reduces your investment

Just a glance at the diagram above will tell you the Du Pont Solo-Matic Process is far simpler than multi-stage bleaching units . . . *yet it can do the work of a multi-stage unit in the same time and in half the space.*

Look over the advantages and you'll see why the Solo-Matic Process can make a *profitable* difference in your operation.

SPACE-SAVING—a typical Solo-Matic setup with one J-Box occupies a space of only 45 feet by 20 feet . . . bleaches up to 6,000 lbs. of cloth per hour.

EXCELLENT SPACE/PRODUCTION RATIO—The Solo-Matic can match your present production in one-half the space of a conventional unit, or double your output in the same space.

ECONOMICAL—The Solo-Matic Process saves up to 40% on utilities, operating costs and capital investment . . . requires no more chemicals than many two-stage continuous systems. It makes the most efficient use of steam and water, too . . . reduces seconds and rejects.

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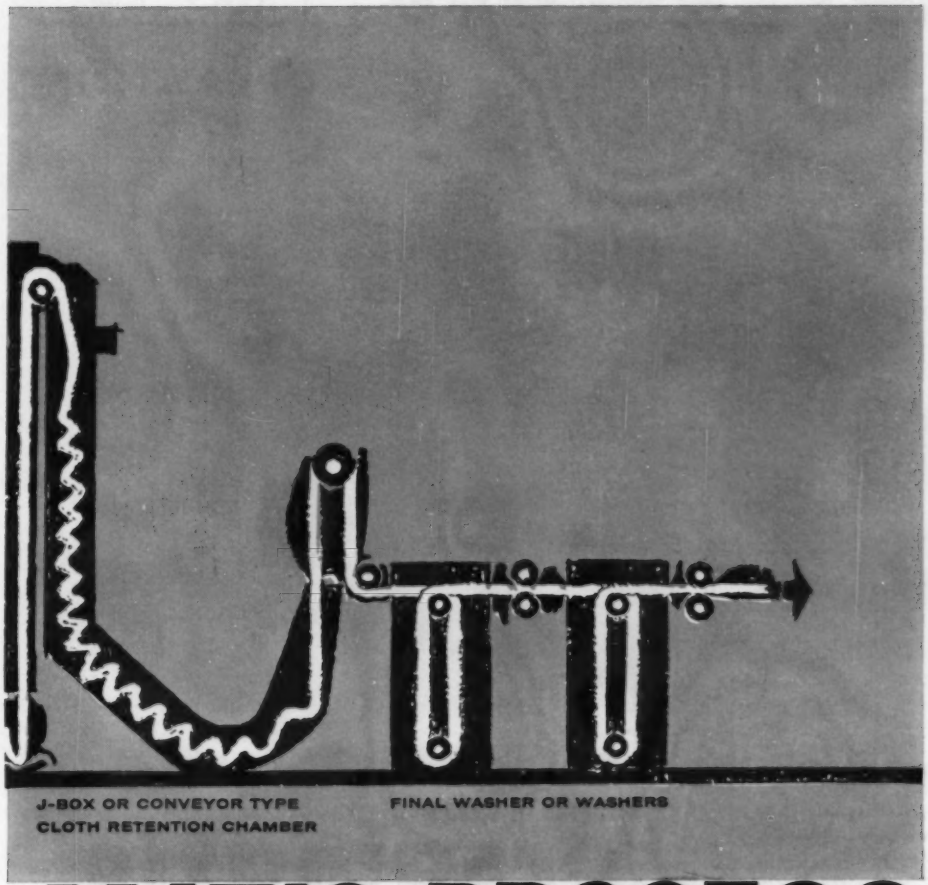
stage bleaching method you can use



-MATIC PROCESS

FLEXIBLE—The Solo-Matic can be used with any standard cloth pre-treatment . . . fits in with new or existing equipment.

HIGHEST-QUALITY RESULTS—The Solo-Matic Process assures high uniform brightness, improved hand and absorbency, freedom from friction and bruise marks.

We'll be glad to send you all the facts. Write to the address on the right for our new illustrated booklet which describes more fully the advantages of the process. See for yourself why the Du Pont Solo-Matic Hydrogen Peroxide Process is the most advanced single-stage bleaching system yet developed!

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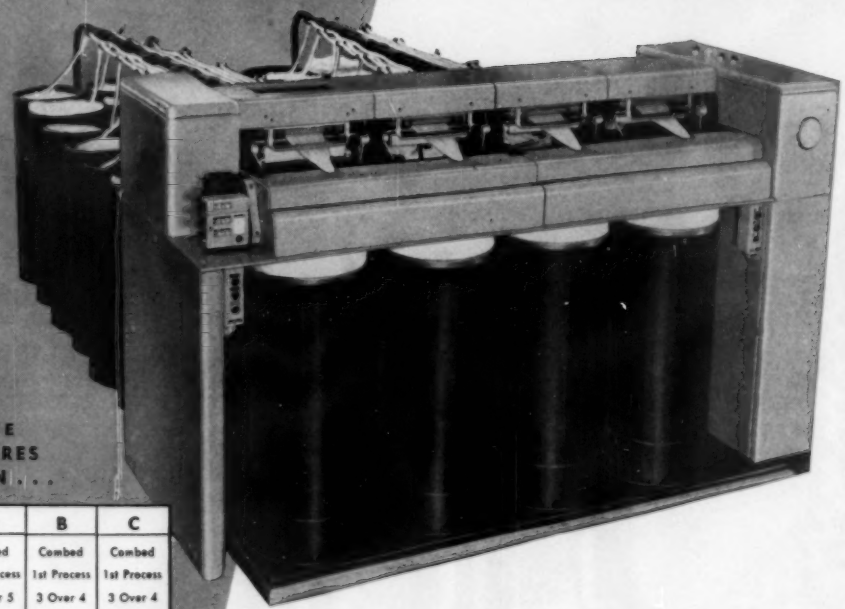
Production- KEY TO PROFITABLE OPERATION



COMPARE THESE PRODUCTION FIGURES WITH YOUR OWN . . .

Mill	A	A	B	C
Stock	Carded	Carded	Combed	Combed
Process	1st Process	2nd Process	1st Process	1st Process
Model Versamatic	4 Over 5	4 Over 5	3 Over 4	3 Over 4
Sliver Fed	52.5 gr.	54 gr.	55 gr.	120 gr.
Ends Up	8	8	8	4
Speed	264 ft./min.	264 ft./min.	260 ft./min.	216 ft./min.
Sliver Delivered	54 gr.	56 gr.	55 gr.	60 gr.
Tester	Saco-Lowell	Saco-Lowell	Saco-Lowell	Brush
Variation	18%—19%	18%—19%	10%—13%	14%—16%
Efficiency	92%—95%	92%—95%		
Deliveries	16	16	60	32
Deliveries/Operator	32	32	30	32
Can Size—Back	15" x 42"	15" x 42"	15" x 36"	
Can Size—Front	15" x 42"	15" x 42"	15" x 36"	14" x 36"
Yards/Can	3800 yds.	3875 yds.	3300 yds.	2850 yds.
Pounds/Can	29.3 lbs.	31.0 lbs.	25.9 lbs.	24.4 lbs.
Draft	7.77	7.71	8.03	8.03
Pounds/Man Hour	1250 lbs.	1270 lbs.	1105 lbs.	1070 lbs.

Versamatic DRAWING FRAMES by SACO-LOWELL

GIVE HIGHEST PRODUCTION OF QUALITY SLIVER BY EVERY STANDARD — PER DELIVERY — PER MAN HOUR — PER HORSEPOWER — PER SQUARE FOOT OF FLOOR SPACE.

For complete information and a demonstration — call your nearest Saco-Lowell office.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

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One of Our Most Important Services It Costs You Nothing!

Next to quality yarns and quality colors, color and yarn consultation can be one of the most important services we offer — even though it costs you nothing.

We can save you the embarrassment of selecting a shade which is unobtainable with the type of dyestuff you need, from the costly error of using dyestuffs that will bleach out, run, crock or fade rapidly, or from using yarns that may be good for some purposes, but not for yours.

On the other hand, we can recommend dyestuffs and yarns that are ideal for your purposes and that will make your fabrics more salable.

Much of this type of help is unobtainable from books (even if you had time to read them). It is information gained during nearly half a century of experience by the "largest package dyers in the world".

Franklin Process Color and Yarn Consultation is "conveniently yours" from any one of our dyeing plants, or from our New York office. Just ask and we'll oblige.

Franklin Process

Yarn Merchants and Largest Package Dyers in the World — Dyeing Exclusively on the Franklin Spring

Providence • Philadelphia • Greenville • Chattanooga
Fingerville, S. C.
New York Office — 280 Madison Avenue

X-ray view of Franklin Package — the "secret" of uniform shades. Don't say "package dyed". Say "Franklin Process Dyed".

For more data, write this page number on Reader-Service card. →

RIGHT... and proved right... for every frame and fiber... Armstrong Accotex Cots

A change in your spinning equipment, or a switch from natural to synthetic fibers or blends, usually calls for a corresponding adjustment in your roll coverings. But whatever the new setup is, there's an Accotex® Cot compounded and proved right for the job.

These cots are designed to combat such problems as eyebrowing, lap-ups, and yarn irregularities . . . and they'll help you spin stronger, more uniform yarn.

For example, if eyebrowing is a problem on your spinning and roving frames, a change to Accotex NC-762 will probably help to control it. This new roll cover has just the right surface friction to pack the waste well back under the clearers. And its anti-static properties help to reduce waste substantially. Like all other Accotex Cots, NC-762 will give you dependable performance, shift after shift.

In spinning on frames where metal-to-metal contacts have been eliminated, you may be plagued with lap-ups, caused by high static. In this case, one of the new Armstrong anti-static compounds is the remedy—an answer already discovered by hundreds of mills.

When you plan a change in fiber, or in equipment, it's a good idea to call in your Armstrong man early. His special training and practical experience can be of help in choosing the right roll cover for best yarn production in your mill. Armstrong Cork Company, Industrial Division, 6511 Dauphin St., Lancaster, Penna.

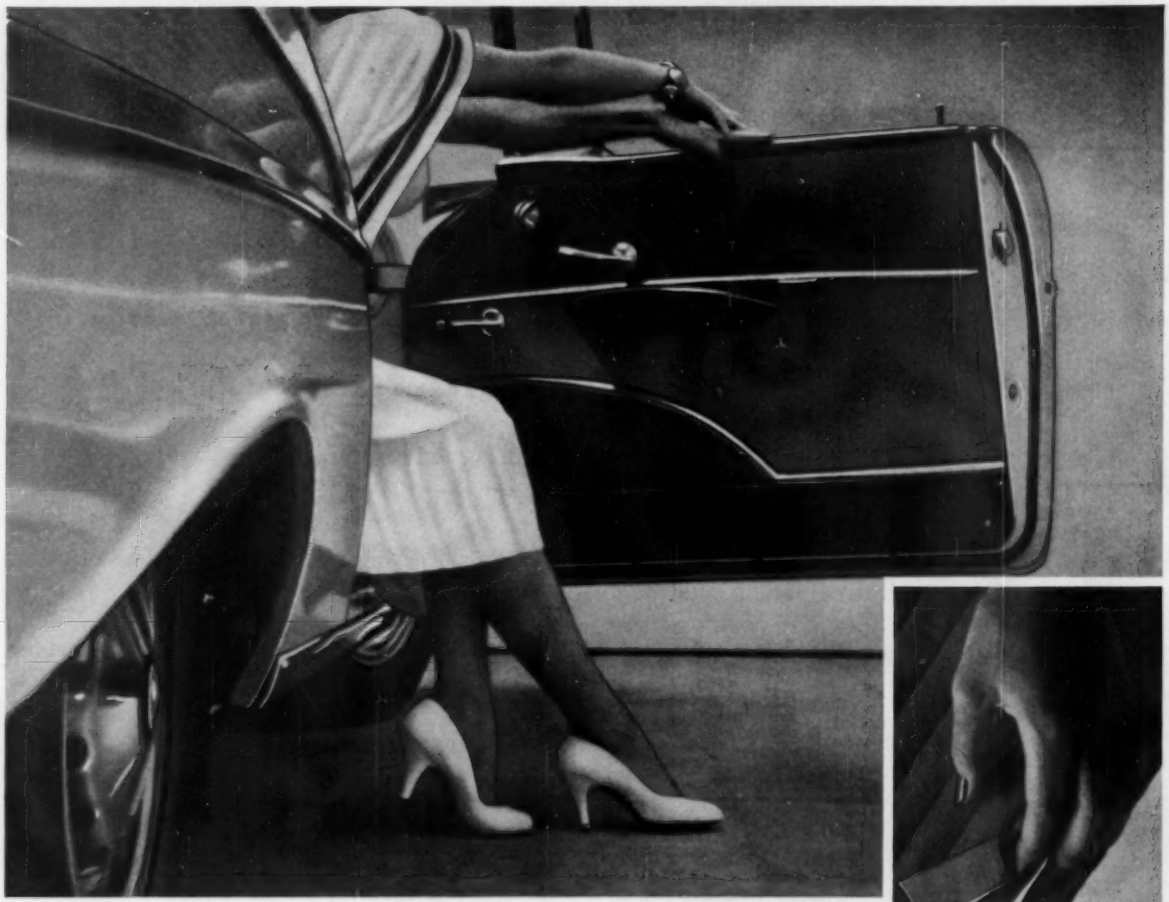
For more information about Accotex Roll Covers, and other Armstrong textile supplies, write for the booklet, "Armstrong Textile Supplies." Look to it for help in selection, installation, and maintenance of Armstrong spinning and weave room supplies.

Armstrong ACCOTEX COTS

. . . used wherever performance counts

Another new development using

B.F.Goodrich Chemical *raw materials*



Geon makes a triple play in this automotive upholstering material. The backing is cardboard coated with Geon latex; padding is economical nonwoven fibers bonded with Geon latex; exterior is fabric coated with Geon. The assembly is heat sealed.

sales clincher...exciting new materials with **GEON**

SHE DOESN'T KNOW the compression ratio, but she knows what she likes in fabrics. And this is it.

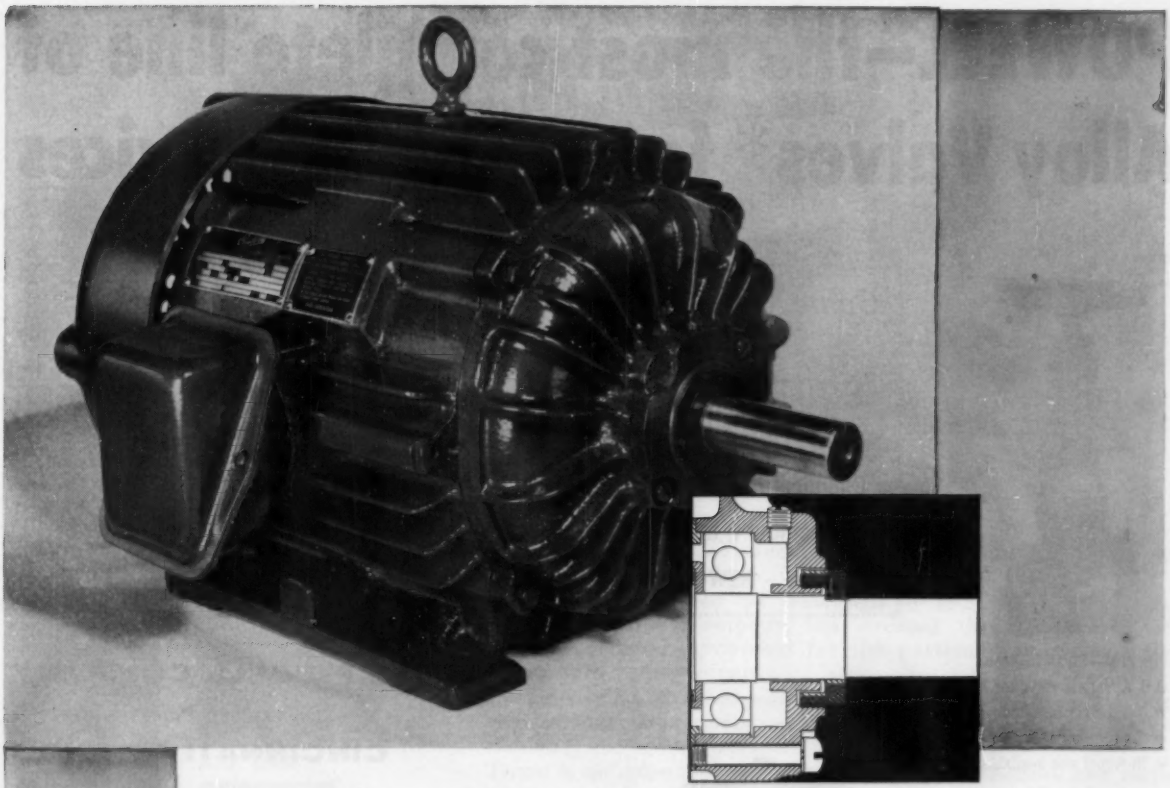
Geon polyvinyl materials, coated on fabric, impart the luxurious, colorful look, permit an infinity of surface patterns. Rugged too – waterproof, abrasion-resistant, readily washable.

Versatile Geon gives new cars beauty in upholstery, safety in foam padding, economy in molded air ducts, improved performance in electrical insulation. Geon and sales benefits go together – investigate this remarkable plastic raw material for *your* products.

HOW WE CAN HELP YOU—B.F.Goodrich Chemical, the pioneer in polyvinyl plastics, supplies hundreds of different types of resins, plastics, latices, and polyblends tailored to specific uses. Our Sales Service laboratory can give invaluable help in application. For information write Department FX-6, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B.F.Goodrich Chemical Company
a division of The B.F.Goodrich Company

B.F.Goodrich **GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors**



Securely sealed for low maintenance —

TOTALLY ENCLOSED FAN COOLED MOTORS

Century

When motor maintenance goes down, production goes up. Century TEFC Motor *protects itself* from dust, grit, chemical fumes, moisture. Shaft openings at each end are labyrinth-sealed, and there is a precision clearance between metal seal and bearing bracket.

Outside, a hose or whisk broom quickly cleans it. External fan forces jets of cooling air across the frame. Inside, vital motor parts are completely sealed off from injurious atmosphere. Factory lubrication of bearings is adequate for several years' service under normal conditions; however, whenever required bearings may be relubricated through grease plugs.

For full facts on your specific application, call the Century District Office or Authorized Distributor nearest you.

CENTURY . . . building TEFC Motors for 25 years

CE-66

Performance-Rated©
MOTORS
1/20 to 400 H.P.

CENTURY ELECTRIC COMPANY

1806 Pine Street • St. Louis 3, Missouri • *Offices and Stock Points in Principal Cities*

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POWELL—the most complete line of Alloy Valves* for Corrosive Services

Fig. 2194—Small Ni-Resist. O.S. & Y. Gate Valve for 225 W.O.G. Larger sizes, flanged end, and swing check valves in Ni-Resist also available.

Come... see us at
BOOTH 133
26th Exposition of Chemical Industries
December 2 to 6
COLISEUM - NEW YORK

It's a fact . . . Powell offers more kinds or types of valves, available in the largest variety of corrosion-resistant metals and alloys, to handle practically every known corrosive fluid. The complete line includes gates, globes, angles, checks, "Y's", relief, flush bottom tank valves and others—for pressures from 150 to 1500 WP. A few are shown on this page.

Your local valve distributor will be glad to tell you all about them. If none is near you, write to us for the full facts on Powell Valves and Powell Engineering Service.

THE WM. POWELL COMPANY
Dependable Valves Since 1846
CINCINNATI 22, OHIO

**Powell Alloy (Corrosion Resistant) Valves are available with screwed or flanged ends. Flanged end valves conform to latest standards.*

Fig. 1832—Stainless Steel Gate Valve for 200 W.P. Screwed-in bonnet, inside screw rising stem, solid wedge disc.

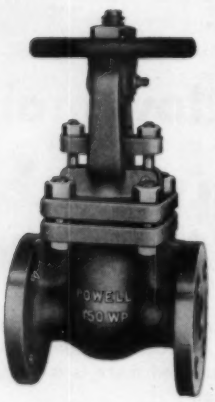

Fig. 2491—Stainless Steel Gate Valve for 150 W.P. Outside screw rising stem and yoke, solid wedge disc. Can be supplied with interchangeable split wedge disc

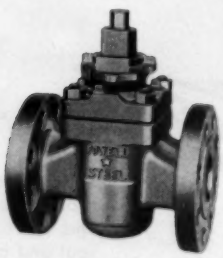

Fig. 1559—Steel Lubricated Plug Valve for 200 W.O.G. Screwed gland type. 6" and larger valves can be furnished for gear operation.

Fig. 1893—Large O.S. & Y. Gate Valve for Paper Mill Service. 3% Nickel Iron Body, bonnet, yoke; stainless steel stem, screwed-in seat rings; Ni-Resist wedge.

Fig. 2433SS—Large size Stainless Steel Swing Check Valve for 150 W.P. Bolted Cap.

Fig. 2107—Stainless Steel "Y" Valve for 150 W.P. Plug type disc. Face to face and end flange dimensions conform to latest standards.

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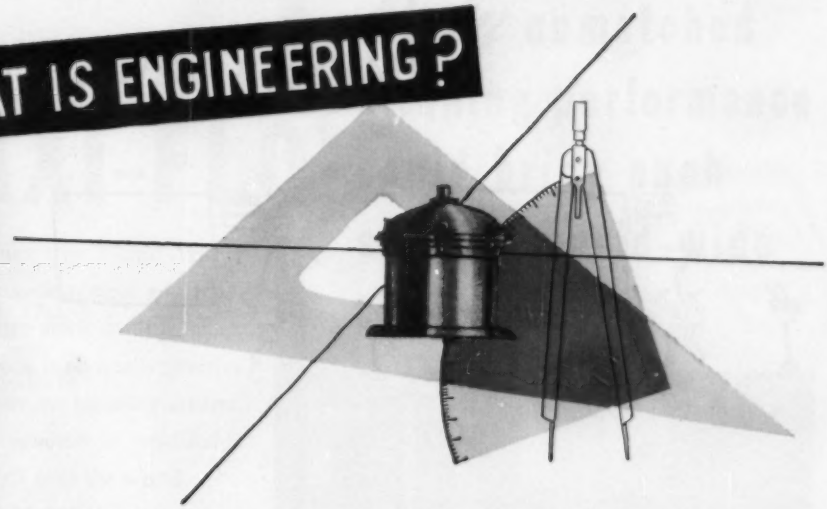
WHAT IS ENGINEERING?



C. J. Webb

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ENGINEERING STAFF

Office building and machine shop

New assembly plant

Engineering may be defined in many ways since it covers so many fields of endeavor.

Since it was founded 36 years ago in 1921, Gaston County Dyeing Machine Company has stressed the importance of custom designed equipment for the particular needs of individual mill requirements.

To accomplish this purpose we have constantly expanded our engineering department to meet the needs of the textile industry.

There is no substitute for experience, and we believe our engineers have the ability and experience to assist you in solving your problems in processing equipment of all types. Educational backgrounds include North Carolina State College, University of Tennessee and Duke University.

The dyeing of yarns, fabrics and raw stocks was and to some extent still is an art; however, the rapid development of new fibers has resulted in much research and laboratory work to develop new dyes and chemicals to obtain proper dyeing of the new fibers. Dyeing and drying of textiles may now be properly called a science.

The above developments require new and better designs in dyeing and drying machinery in order that maximum results will be secured with improved dyes and chemicals.

A complete service in engineering, designing and building of processing equipment is yours for the asking.

GASTON COUNTY DYEING MACHINE CO.

ESTABLISHED 1921 — STANLEY, N. C.

DESIGNERS AND BUILDERS OF DYEING, BLEACHING, EXTRACTING, AND DRYING MACHINES

Stainless Steel Fabricators—Process Tanks and Pipe

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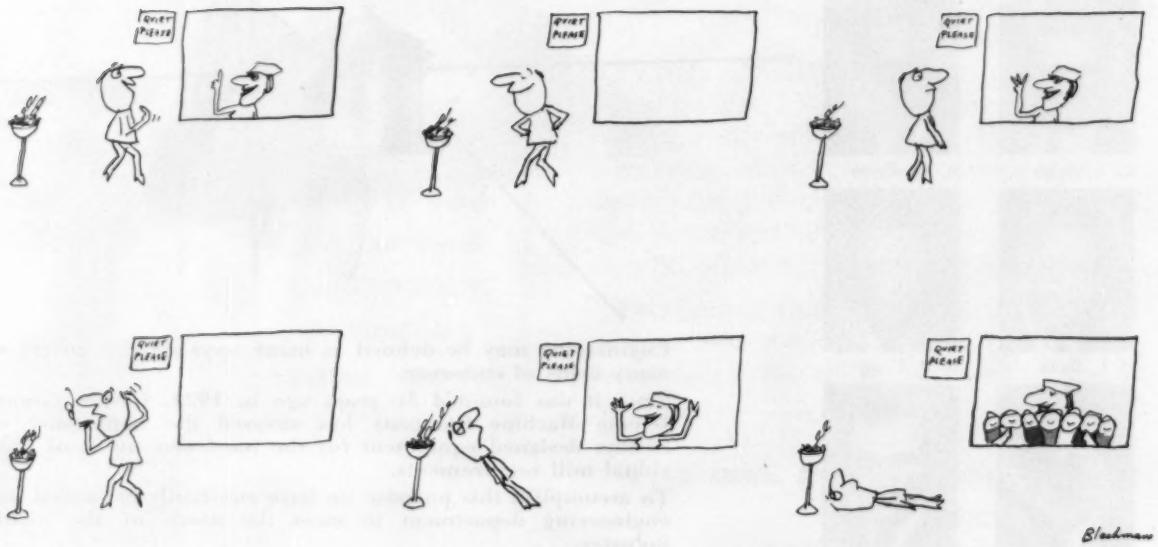
HAPPY ARRIVALS



7 new drapery colors in Courtaulds' Coloray*... all amazingly non-fading!

AQUA, ROSE, SAGE, CRYSTAL BLUE, MOCHA, ECRU *Non-fading after 500 Fadeometer hours, proving fastness six times better than the standard for drapery colors, L6 (which means no fading after only 80 hours). South Florida sun tests now being conducted.*

DAWN PINK *Non-fading after 160 South Florida sun hours, proving fastness equal to the standard, L7.*

For the special delight of the drapery trade, Courtaulds has developed a series of light, almost luminous pastels with extraordinary colorfastness to sun and light... and everything. Happy colors indeed! They bring the total of Coloray basic shades to 25. They skyrocket the number of possible Coloray blends into the stratosphere. For Coloray rayon staple blends in infinite ways to produce infinite color effects. And Coloray, being a soft spun fiber, contributes a luxurious hand to fabrics for draperies, upholstery, every facet of home furnishings and fashion. It's wonderful to work with Coloray!

COURTAULDS'

COLORAY®

Solution-dyed Rayon Fiber With Captive Color..."Can't Escape!"

WHY SO COLORFAST? Because of Courtaulds' famous method of solution-dyeing. Color is poured into a viscose solution which flows into spinnerets and emerges as fully formed Coloray fiber. And inside, is that wonderful Coloray color. It's caged in. It can't get out.

For further information, write:
COURTAULDS (ALABAMA) INC., *first name in man-made fibers, first name in solution-dyeing,* 600 Fifth Ave., New York 20 • Greensboro, N. C. • Le Moyne Plant, Mobile, Ala.

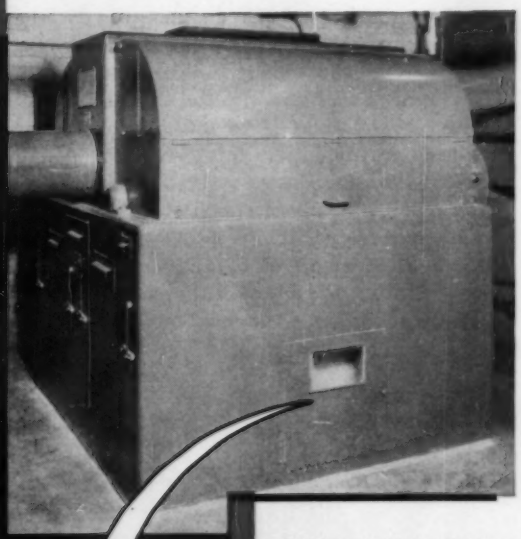
Whitin AXI-FLO*

Only unmatched cleaning performance could bring such speedy, world-wide acceptance

The gentle buffeting action of the new type Whitin Axi-Flo cleaner results in greater dirt, grass, dust, mote and trash removal; improved blending; better stock quality; much lower power and maintenance costs. It is especially effective when preceded by Axi-Feed openers on blending feeders. Its outstanding performance has resulted in remarkably rapid acceptance by leading mills all over the world.

AXI-FLO PERFORMANCE DATA

Cotton Grade	Average percent Waste Removal	Cotton Grade	Average percent Waste Removal
GM	.5 - .6	SLM	1.2 - 1.8
SM	.6 - 1.0	LM	1.6 - 2.5
M	.7 - 1.6	SGO - GO	2.0 - 4.0



PARTIAL LIST OF LEADING MILLS NOW USING AXI-FLO

United States

Alexander Mills
Avondale Mills
Berkshire Hathaway
Bibb Mfg. Co.
Chicopee Mfg. Co.
Fieldcrest Mills
Franklin Process Co.
Gold-Tex Fabrics Corp.
Green River Mills
Greenwood Mills
Hadley-Peoples Mfg. Co.
Inman Mills
Jefferson Mills
Judson Mills
Kendall Co.
Lydia Cotton Mills
Mission Valley Mills
Monarch Mills
Pepperell Mfg. Co.
Reeves Bros.
Spartan Mills
Woodside Mills

Canada

Canadian Cotton Co. Ltd.
Hamilton Cotton Co. Ltd.
Wabasso Cotton Co. Ltd.

More than 50 mill installations in:

Mexico • Colombia • Belgium • France • Finland • Holland • Germany • Austria • Italy • Switzerland • India • Korea

*TRADE MARK

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

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How gleaming aluminum buildings rise from red mud

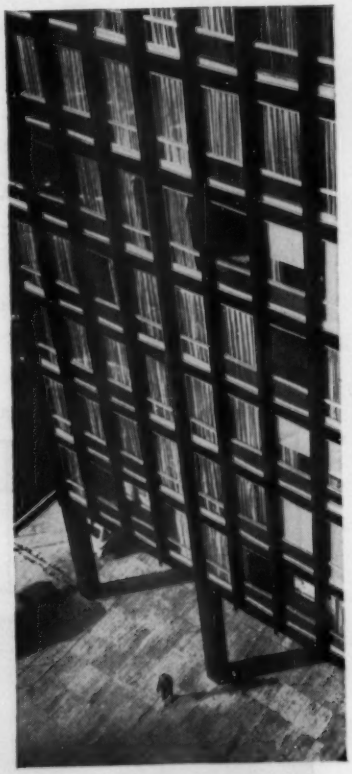
From Babel onward, men have held the vision of ever brighter, ever lighter towers soaring to the sky. Modern metals provided practical substance for the old dreams . . . look around at what's come true so recently.

High on any list of today's versatile, economical building materials you find aluminum and its alloys. Plate, sheet, rolled forms, extruded sections, tubing, wire, rod—forged, stamped, spun—this wondrous metal answers architects' aspirations, fabricators' requirements and users' needs.

With aluminum, as is so often true, the basic raw material is found in nature wildly mixed with other mineral compounds. Bauxite must be carefully purified to provide alumina, the effective starting point for aluminum. Here again, we're happy to report, major producers turn to Columbia-Southern.

Finely ground bauxite is digested with an alkaline solution, under pressure and heat. Treatment with the alkali separates bauxite into sodium aluminate (just several short steps this side of alumina) and a sludge of impurities called "red mud." No other chemical product known effects this necessary and delicate process so well, so economically as soda ash.

Columbia-Southern supplies soda ash to hundreds of producers of non-aluminum goods, too. A personal talk, call or wire can bring tank cars of chlorine, soda ash or other basic alkalies and specialty products to your siding with a speed that will probably amaze your own Traffic Department. Why not contact Columbia-Southern today, while the thought's still fresh?



900 Esplanade Apartments, Chicago—a new concept in multi-story exteriors making extensive use of aluminum supplied by Reynolds Metals Company. Architect: Ludwig Mies van der Rohe

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

ONE GATEWAY CENTER · PITTSBURGH 22 · PENNSYLVANIA

chemicals at work

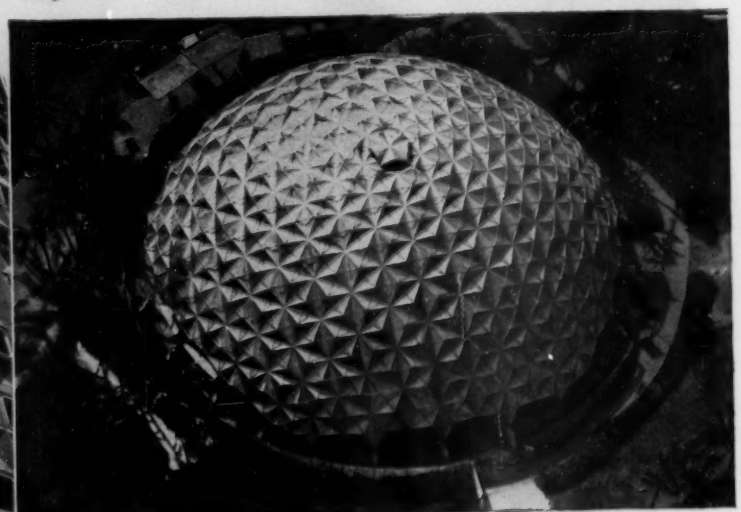
CHLORINE, ALKALIES AND RELATED CHEMICALS

OFFICES IN PRINCIPAL CITIES

IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

The Alcoa Building, world's first aluminum skyscraper, headquarters of the Aluminum Company of America, Pittsburgh, Pennsylvania. Architects: Harrison & Abramowitz.

Aluminum-domed auditorium, first structure of its kind to be built, graces the Hawaiian Village Hotel in Honolulu. Designed by Kaiser Aluminum & Chemical Corporation.



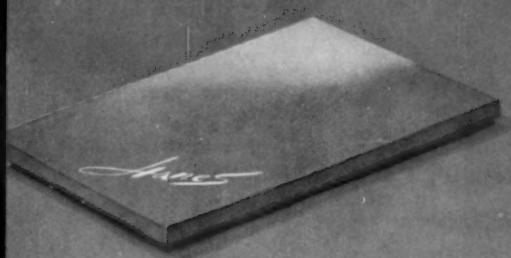
IT'S A FLEXIBLE TEXTILE PACKAGE—WE MAKE IT!

CELLOPHANE

POLYETHYLENE

Textiles are terrific

in customer-catching packages by Shellmar-Betner



SHELL-PLI®
(Carton overwrap of reverse printed acetate laminated to paper.)

You'll make more sales when you wrap the "buy me" appeal of a Shellmar-Betner package around your product. And you'll cut down on lost profits from soilage because your product is perfectly protected.

Whether you choose Shell-Pli, Cellophane, or Polyethylene, you can be sure your product will always look its best. A package by Shellmar-Betner gives your product its own private showcase. And we have the printing craftsmanship to make your name stand out and be remembered.

Why not call Shellmar-Betner today? We'll be glad to design a package for your textile product.

TMP*—the new science of salesmanship in packaging

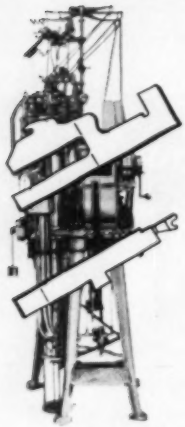
TMP* means "Tailor-Made Packaging"—the kind that strikes the eye, makes customers buy. Whether it's film, foil or paper, we create packages with built-in sales appeal. You'll sell your products best, with TMP.

CONTINENTAL CAN COMPANY

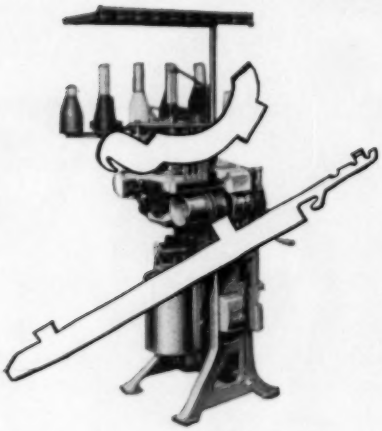
SHELLMAR-BETNER DIVISION

SOUTH GATE, CALIF. MOUNT VERNON, OHIO DEVON, PA.

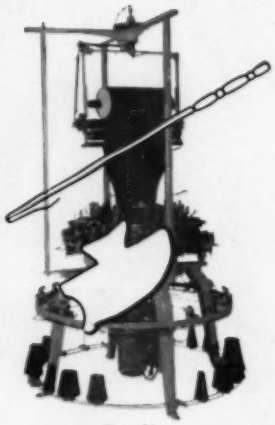
QUALITY PRINTERS AND CONVERTERS OF FLEXIBLE PACKAGING MATERIALS



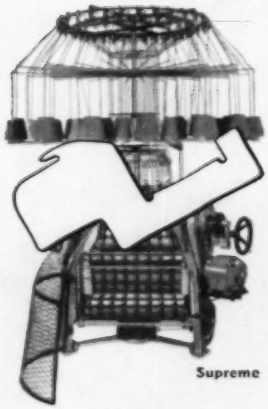
Scott & Williams



Bentley



Tompkins



Supreme

IVES Replacement Parts

are "tailored" to fit *exactly* the machines for which they are intended. That's why they are used for knitting the world's finest fabrics. All of IVES' needles and parts are specially hardened and tempered, insuring smoother and longer wearing parts that reduce your costs and increase your profits.

Contact IVES if you operate these machines:

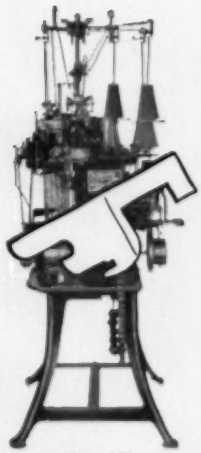
Supreme ● Fidelity ● Tompkins

Kidde ● Precision ● Brinton

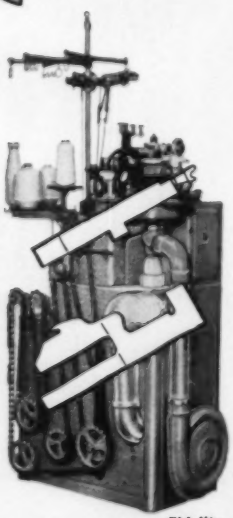
Wildman ● Crane

Banner ● Reiner

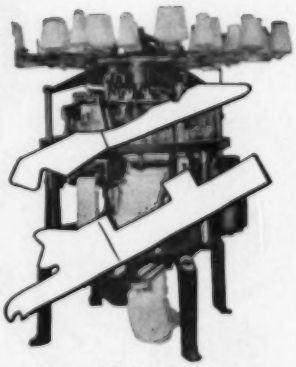
Scott & Williams ● Bentley



Hemphill



Fidelity

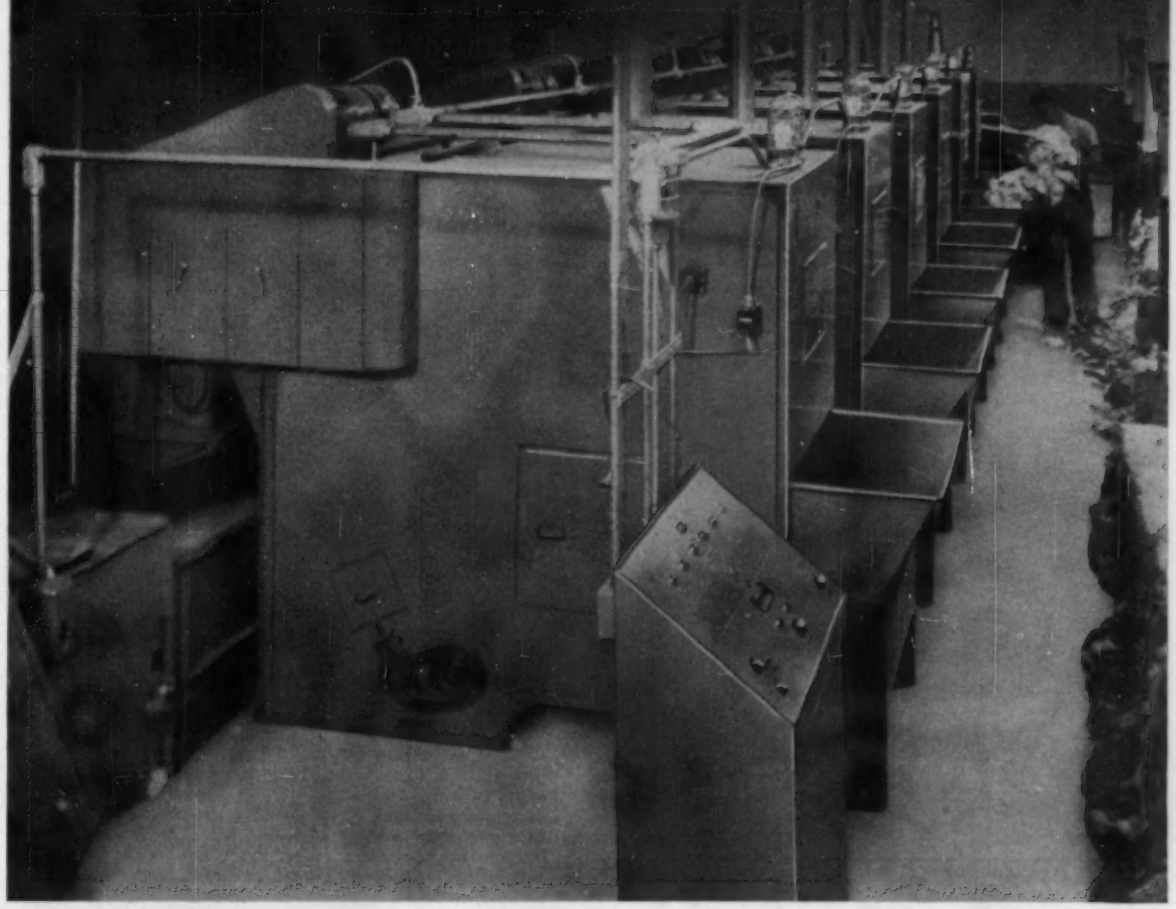


Wildman

THE LOYAL T. IVES COMPANY, INC.

NEW BRUNSWICK, N. J.

HUNTER *FiberMeter*® HOLDS BLEND VARIATION DOWN TO 1%



The Hunter FIBER METER adds this new high degree of precision to feeder operations. Automatic weighing and blending eliminates human error, assures virtually foolproof quality control. And a Fiber Meter Automatic Blending System can cut as much as ⅔ off your Opening Room labor costs.

IMPROVES BLEND — The Fiber Meter cuts reject losses due to filling bands, reduces ends down in spinning, raises break factor. Many mills rely on it to maintain quality, while effecting savings with less expensive fibers in the mix.

PRECISE CONTROL — Can be adjusted to weigh any quantity from 2 to 32 ounces at the beginning of the run, and needs no further adjustment. Hopper depletion, mechanical or electrical failure of any individual unit halts the entire line immediately. An imperfect batch cannot slip through for further processing.

COMPLETELY FLEXIBLE — Advanced design makes it easy to clean and set up the Fiber Meter for a new blend or new fibers. Accurate weight graduations permit full mixing flexibility too — even minute quantities of a fiber can be distributed uniformly throughout the mix. Capacity of the system ranges up to 500 pounds per hour per Fiber Meter.

Volume production; higher, more uniform production; lower manpower costs — the Fiber Meter can add all of these profitable extras to your processing picture. Send for complete details now. Write for the new Fiber Meter Bulletin.

JAMES HUNTER

JAMES HUNTER, INCORPORATED • GREENVILLE, SOUTH CAROLINA

A SUBSIDIARY OF JAMES HUNTER MACHINE CO. • NORTH ADAMS, MASSACHUSETTS

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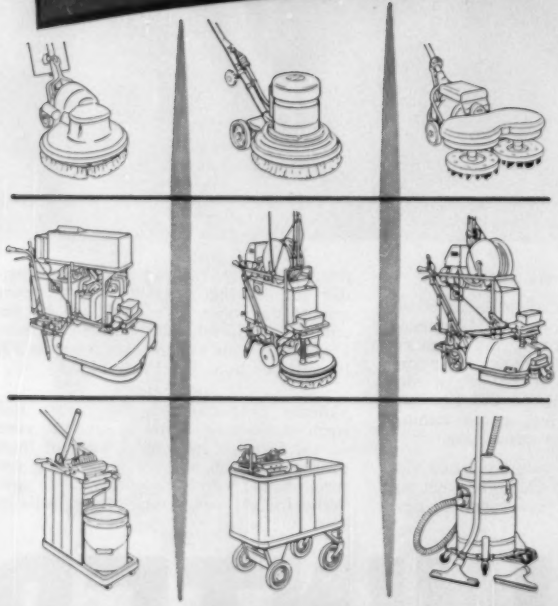
Keep your floor-maintenance men happy . . .

with *Job-Fitted* EQUIPMENT!

Choose from the COMPLETE *Finnell Line*

More than a score of models and sizes permits selection of the equipment that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell offers *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes . . . a *Dry-Scrubber,* with self-sharpening brushes, for cleaning grease-caked floors . . . *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including self-powered as well as electric models . . . *Mop Trucks* . . . a *Wet and Dry Vacuum Cleaner,* in baked enamel or stainless steel, with 1½ hp By-Pass Motor. In addition, *Finnell* offers a full line of fast-acting *Cleansers* for machine-scrubbing . . . *Sealers* and *Waxes* of every requisite type . . . *Steel-Wool Pads* and other accessories — *everything for floor care!*

In keeping with the *Finnell* policy of rendering an individualized service, *Finnell maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you* to help solve your particular floor-maintenance problems . . . to train your operators in the proper use of *Finnell Job-Fitted Equipment and Supplies* . . . and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1911 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

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IN TEXTILES . . . from start to finish!

Harper's Bazaar Photograph

BASIC CHEMICALS . . . from GENERAL CHEMICAL

Here is the Textile Industry's practical source of basic Textile Chemicals . . . the producer with the facilities and specialized experience to meet your exact requirements promptly for these key process materials:

BLEACHING
Sodium Silicate
Tetrasodium Pyrophosphate
Oxalic Acid
Sodium Bisulfite, Anhydrous
Hydrochloric Acid (Muriatic)
Disodium Phosphate, Anhydrous

CARBONIZING
Sulfuric Acid
Aluminum Chloride, Solution

DESIZING
Sulfuric Acid

RAYON MANUFACTURE
Sulfuric Acid
Hydrochloric Acid
Sodium Sulfite
Sodium Bisulfite, Anhydrous

DETERGENT
Disodium Phosphate, Anhydrous
Trisodium Phosphate
Tetrasodium Pyrophosphate
Sodium Tripolyphosphate
Sodium Silicate
Sodium Metasilicate

DYEING
Glauber's Salt, Crystal & Anhydrous
Sodium Sulfate
Acetic Acid
Sulfuric Acid
Hydrochloric Acid
Aqua Ammonia
Oxalic Acid

SOURING
Sulfuric Acid
Hydrochloric Acid
Acetic Acid

OTHER USES
Sodium Thiosulfate
Nitre Cake
Aluminum Sulfate
Ammonium Alum
Potassium (Potash) Alum
Ammonium Sulfate
Mixed Acid
Chrome Alum
Lead Acetate
Ferric Sulfate (Iron Copperas Nitrate)
Ferric Nitrate (Iron True Nitrate)

Baker & Adamson® Laboratory Reagents

Basic Chemicals for American Industry

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo • Charlotte Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) • Houston • Jacksonville Kalamazoo • Los Angeles • Milwaukee • Minneapolis • New York • Philadelphia • Pittsburgh Providence • San Francisco • Seattle • St. Louis • Yakima (Wash.)

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

GC Allied Chemical

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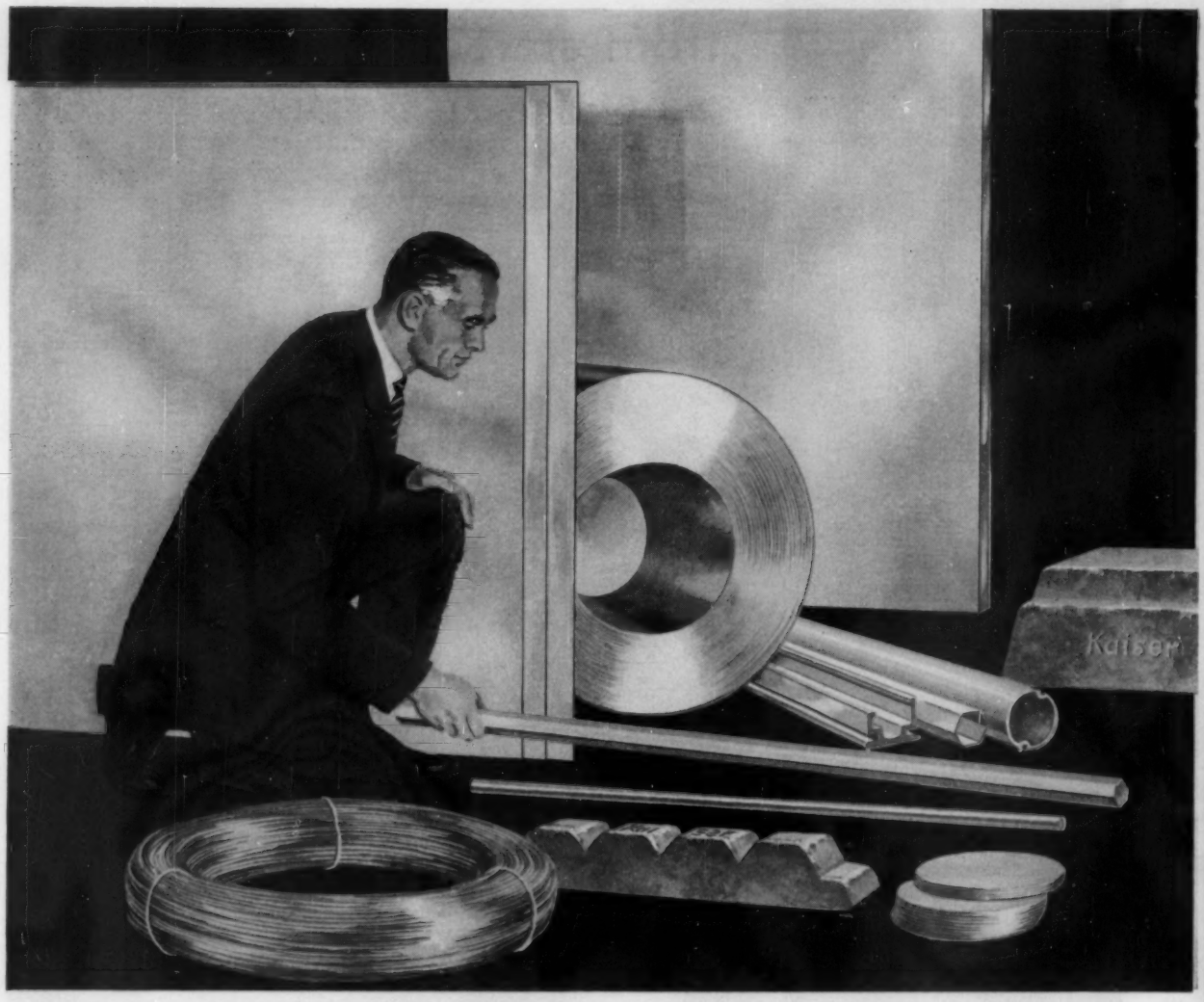

Mr. Equipment Manufacturer:

HERE'S WHAT KAISER ALUMINUM MEANS TO YOU

To you, Mr. Equipment Manufacturer, Kaiser Aluminum offers a unique combination of useful physical and chemical properties for important textile machinery applications: light weight with strength, thermal and electrical conductivity, heat and light reflectivity, corrosion resistance, freedom from rust. Aluminum can be fabricated by all known methods.

Kaiser Aluminum manufactures no textile machinery parts, but does supply the mill products shown above. These include rod, bar, wire, sheet, plate, forgings, extrusions, pig and ingot.

And to help you take advantage of aluminum's versatility for more efficient, more economical equipment designs, Kaiser Aluminum offers you complete engineering service—through Product Development, Industrial Design and Metallurgical Research.

THE BRIGHT STAR OF METALS

Kaiser

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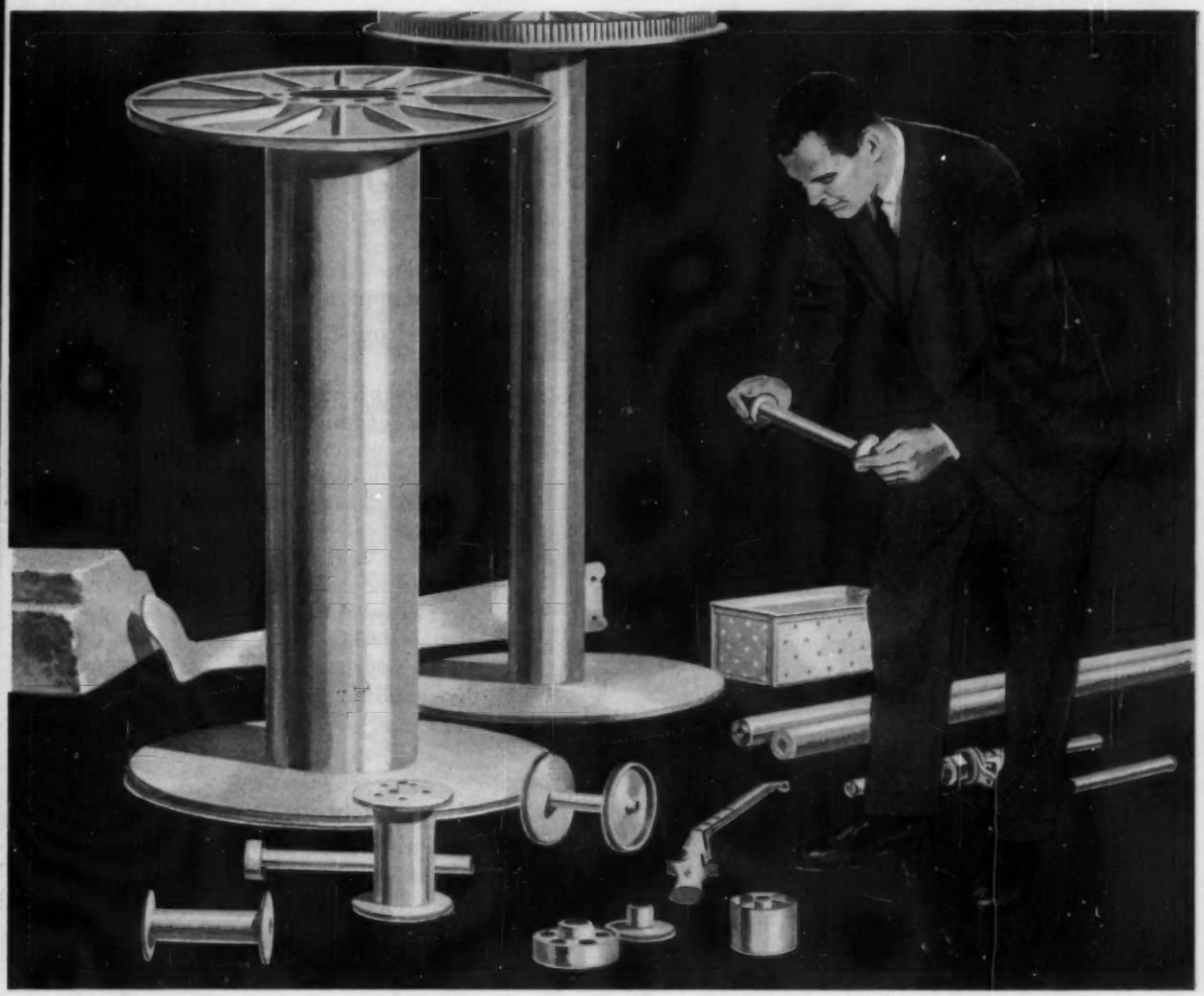


Mr. Textile Manufacturer :

HERE'S WHAT KAISER ALUMINUM MEANS TO YOU

To you, Mr. Textile Manufacturer, textile machinery fabricated of Kaiser Aluminum offers unique benefits in a wide range of applications . . . die cast parts, spinning spindles, bobbins, warp beams, cloth rolls, stock shells, spools, bins and many other parts. Here are some of the advantages only aluminum offers:

Improved efficiency for high-speed rotating or reciprocating units. Aluminum's light weight reduces inertia, thus permits increased operating speeds.

Longer life for equipment exposed to steam and water. And, because aluminum cannot rust it cannot cause stains on yarn or cloth.

Greater economy in equipment maintenance. Aluminum will not absorb moisture, will not warp or splinter. Aluminum parts retain bright appearance, need no paint protection in most environments.

Aluminum

Write for your free copy of our "Product Availabilities" brochure, or call the Kaiser Aluminum sales office listed in your telephone directory. Kaiser Aluminum & Chemical Sales, Inc., *Executive Office,* Kaiser Building, Oakland 12, California; *General Sales Office,* Palmolive Building, Chicago 11, Illinois.

For more data, write this page number on Reader-Service card. →

How the **AVISCO**® Integrity Program helps mills serve converters better at a profit

Where do you figure in an end product tagging program?

Your profit is tied to the prosperity of your converter-customers. Theirs is tied to the acceptance of their fabrics by cutters, who depend in turn upon retailers and the buying public. The Avisco® Integrity Program, now in its third year, is designed to stimulate and protect everyone in this vital chain of distribution by maintaining a known standard of fabric quality.

How does the Avisco Integrity Program work?

The mill produces quality fabrics containing Avisco rayon and/or Avisco acetate alone or in blends of 50% or better with other types of fibers. Converters and finishers process the goods to meet or exceed Avisco test requirements for strength, shrink-resistance and colorfastness to sun, soaking, atmospheric fumes and washing or dry cleaning.

What does the cutter do?

The cutter attaches informative Avisco Integrity Tags to garments cut of this qualified fabric. The retailer displays and promotes the garments with Avisco Integrity Program merchandising material. Many stores report that their customers buy tagged garments with *confidence*, and come back for more.

What part does American Viscose play?

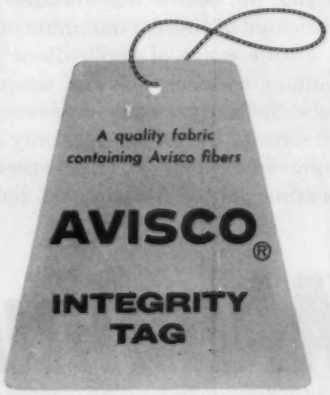
We arrange independent laboratory testing on the qualifications of each fabric. We execute letters of agreement with converters and cutters, assuring us that Integrity Tags will be attached only to garments made from qualified fabrics. We supply tags to cutters and merchandising materials to retailers. We back the entire program with extensive national advertising, identifying the Tag as the tested quality symbol consumers should look for.

How widely has the program been adopted?

Cutters of men's, women's and children's clothes are currently tagging over 1,750,000 garments a month.

Where can you get further information?

Call LA 4-7200 or write
American Viscose Corporation,
350 Fifth Ave., New York 1, N. Y.



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ANOTHER FIDELITY FIRST—*Simplified*

LENGTH CONTROL

with Yarn Tensioner and Compensator*

- Easily installed *in minutes*
- Permits use of new free-running pirns
- Maintains uniformity of stitch construction
- No wearing parts—no maintenance
- Completely self contained
- Tension adjustable in 1/10 gram increments
- Adaptable to *all* Seamless Knitting Machines
- Maintains stretch specifications

Fidelity has the answer . . . and another "first" in a distinguished line of advanced achievements in ***seamless*** knitting equipment.

Years in development . . . the result of exhaustive tests at mills throughout the country to produce a single, compact attachment which assures precise ***seamless*** stocking length with automatic yarn tensioner *and* compensator! The Fidelity Length Control Yarn Tensioner and Compensator offers a combination of design and performance features unequalled by any similar device on the market today.

*Patent Pending

ONLY FIDELITY GIVES YOU LENGTH CONTROL *PLUS* YARN TENSIONING AND COMPENSATING—at a fraction of the *cost* for other length control devices *alone!* Contact Fidelity now for early delivery.

Designers and Builders of Intricate, Automatic Precision Machines

SINCE 1911

FIDELITY MACHINE COMPANY, INC.

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

EXPORT DEPT.: 11 BROADWAY, NEW YORK 4, N.Y.

SOUTHERN REPRESENTATIVE: C. S. BRANNOCK, P.O. BOX 763, MT. AIRY, NORTH CAROLINA

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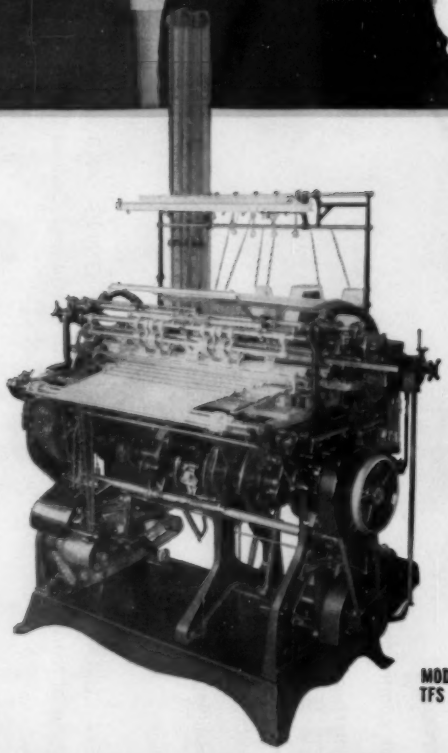
The accent is on *quality* fabrics

Whether it be full fashion or plain interlock, fabrics made on Wildman Jacquard knitting machines are "distinctively different" in quality and appearance.

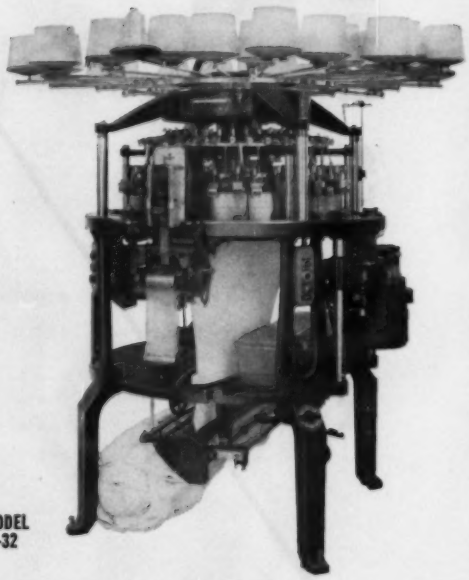
The "TFS" 30″ single section full fashion machine permits increased production, multiplicity of sizes to be run simultaneously, less downtime and greater ease of operation.

The model "AI" 32″ diameter 32 feed "single purpose" circular interlock machine (rib type) produces a larger, more serviceable piece of true interlock fabric.

For knitting versatility... production and quality — specify WILDMAN JACQUARD knitting machinery



MODEL TFS



MODEL AI-32

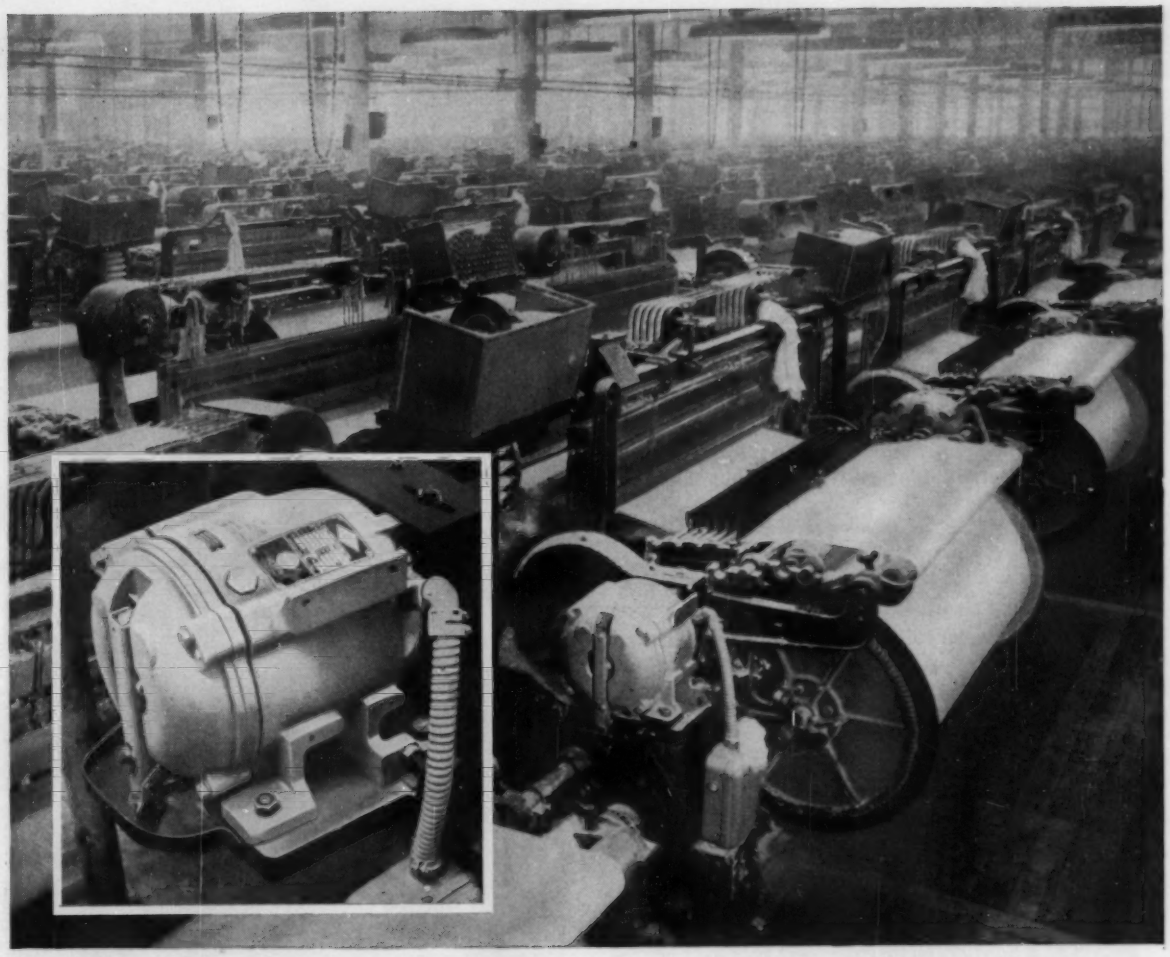
WILDMAN JACQUARD

A subsidiary of Draper Corporation, Hopedale, Mass.

For complete information, write:

WILDMAN-JACQUARD CO.
1210 Stanbridge St.
Norristown, Pa.

. . . Leading manufacturers of fine knitting machinery



AT CONE MILLS

DIEHL transmitters improve product quality

Three hundred Draper looms powered by the latest type DIEHL Power Transmitters were recently installed as part of an important new modernization program at Cone Mills Corporation's Minneola Plant, Gibsonville, N. C., with most satisfactory results in the improvement of loom performance and product quality.

DIEHL Power Transmitters were developed especially for Draper looms, and feature a fast, positive clutch-brake mechanism combined with an inverted type motor which provides high inertia without need for a separate flywheel. This design produces a constant steady pull for more efficient weaving and better quality greige goods, in the opinion of a plant official. "Increased efficiency of looms will be joined by lower operating costs because of the combination of Draper X2 looms and DIEHL Transmitters," he said. The looms now run at 186 picks per minute.

Cone Mills plant officials are favorably impressed with the positive action of the clutch-brake mechanism, the pinion driving shaft construction which eliminates the thrust bearing on the loom, the speed and ease of removal and replacement of the transmitter for inspection and servicing, the totally enclosed housing design which protects against weave room lint and fly, and the negligible maintenance and down-time costs.

DIEHL Power Transmitters can increase production and efficiency—at lower operating costs and less down-time—in your mill. Specify them for your looms.

DIEHL MANUFACTURING COMPANY
Electrical Division of
THE SINGER MANUFACTURING COMPANY
Finderne Plant, SOMERVILLE, N. J.

☐ Please send me Consolidated Motor Catalog and Price List No. TW-11 3540

☐ Please send me Textile Motor Bulletin No. TW-11 3526

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COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

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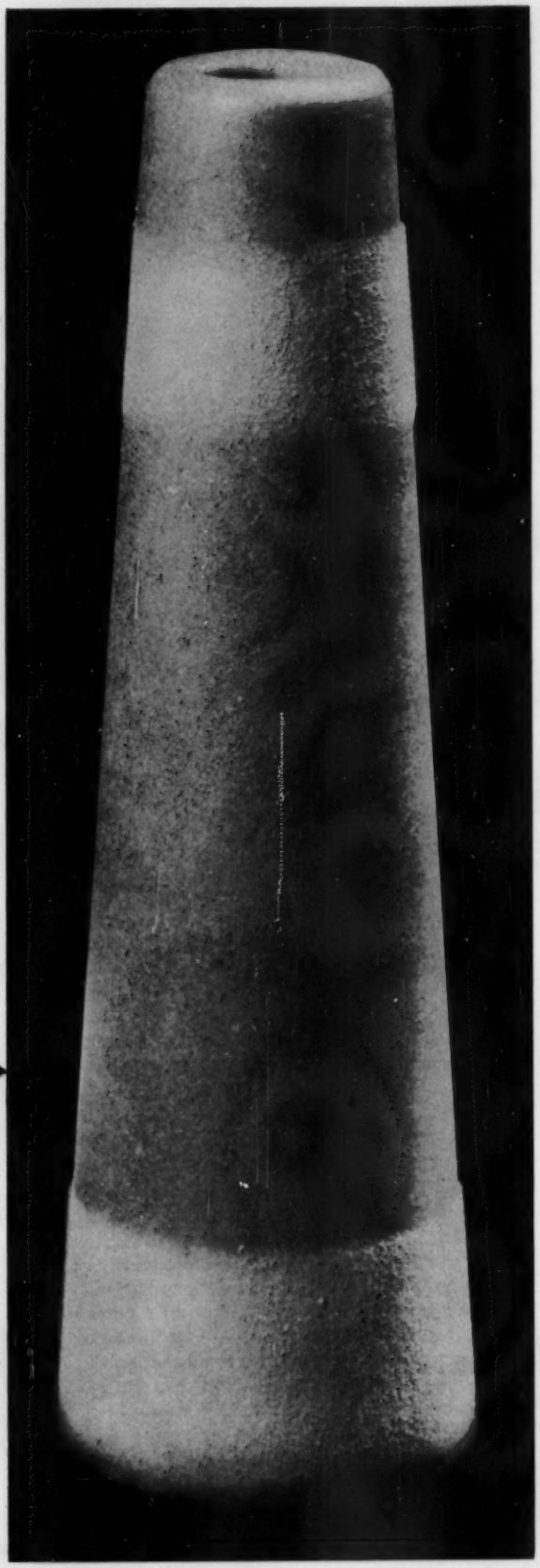
When you reduce waste you increase profits!

Use the right cone surface for your operation ...SONOCO has it!

The surface of a cone can have *everything* to do with winding a perfect package, or effecting delivery of yarn. Since profit depends on trouble-free production, it is essential that you use a cone with the proper surface.

In 58 years of continuous research, SONOCO has perfected a wide range of surfaces from coarse, velvet and polished to scored and grooved—in different weights, tapers and nose finishes. Each cone surface was developed by SONOCO for a specific purpose. SONOCO research can benefit you!

Let a SONOCO technical expert help you get the greatest efficiency in winding, packaging and delivery of your yarns . . . remember, when you reduce waste you increase profits!



Typical of SONOCO research is the 3°30′, Unitex Surface Cone shown here. Its smooth surface is banded with a flock finish to prevent slippage in primary winding and permits free delivery to the last turn. Perfect for winding silk, rayon, nylon or other filament yarns.

SONOCO
SERVES THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

913

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

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A complete

TUFTING YARN SYSTEM

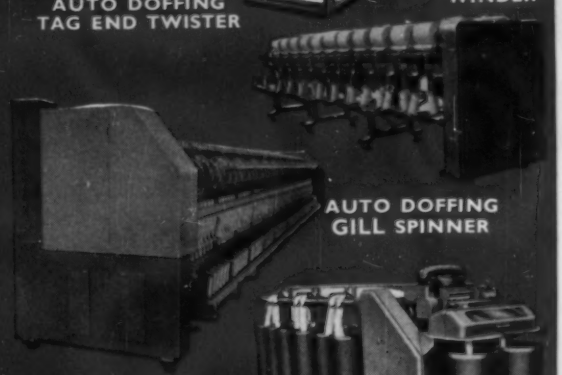
for

VISCOSE, ACETATE, HIGH CRIMPED NYLON, etc., 4-50 Deniers & 4"-8" Staple

AUTO DOFFING TAG END TWISTER

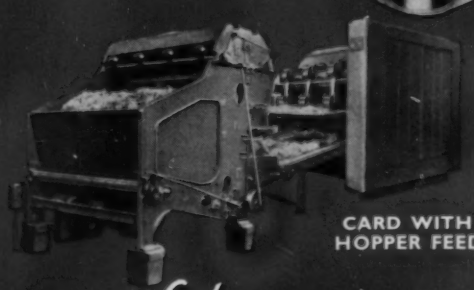
MACKROLL WINDER

- This Tufting Yarn System has been developed in response to the increasing demand for a non felting long-wearing carpet.
- The Gill Spinning Unit with its Pin Control and Automatic Doffing is the most versatile unit of its type on the market to-day.
- Gill spun yarns have been proven to give high tufting machine efficiencies.
- Complete Units sold to the United States of America, Europe, Africa and Australia.



AUTO DOFFING GILL SPINNER

INTERSECTING DRAWINGS



CARD WITH HOPPER FEED

ENQUIRIES INVITED SAMPLES SPUN ON REQUEST

TEXTILE MACHINISTS SINCE 1846

James Mackie & Sons Ltd

BELFAST, NORTHERN IRELAND

S2.

Jacques Wolf Textile Printing Chemicals

MEASURE UP TO EVERY NEED

PRINTING

SUPERCLEAR* — All viscosities. Used for machine and screen printing of all types of textile fabrics. Produces bright prints with sharp outlines and very fine detail. Also used extensively to prevent migration of colors in dyeing.

SUPER GUM H—Full flow for roller and screen printing application. High color value, easy to handle. Compatible with all colors. Effective with acid or alkaline medium.

GUM TRAGACANTH SOLUTION—Made by a patented process. Used with Acid, Direct or Insoluble Azo Dyestuffs for screen printing, this gum gives exceptionally clear, sharp prints.

SCREEN GUM W-1141-B—Used as a thickener for Rapidogen and Indigosol type dyestuffs. Good color value; excellent mark and washes easily.

VAT GUM 80 XX—For application and discharge printing of vat colors. Has necessary balance of sulphoxylates, carbonates and hygroscopic agents plus converted thickeners to assure high color value.

DISCHARGING

HYDROSULPHITE AWC—Used for application of vat colors and for discharge printing on all textiles. It may also be employed for stripping woolens, acetates and other fabrics.

HYDROZIN—Used for discharge printing on acetate grounds. Also used for stripping colors on wool and hosiery (nylon, etc.). As a catalyst for polymerization of Vinylmonomers.

MORDANTS

ACETATE OF CHROME, ALUMINUM ACETATE, ALUMINUM FORMATE

*Reg. U.S. Trademark

Jacques Wolf & Co. measures up to your printing needs again and again. For any step—in any spot—Jacques Wolf has a complete line of chemical auxiliaries, designed specifically for better performance. Here's a variety of up-to-date products and services that can positively be adapted to your operation—to improve your techniques, giving you brighter prints, sharper outlines. For information and samples, contact Jacques Wolf & Co. today.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

JACQUES WOLF & CO.
Chemicals PASSAIC, N.J.

. . . to Modernize Your Mill with New American Textile Machinery

Today, American textile machines of all types are at an all-time high in adaptability of design . . . versatility of use . . . quality and quantity of production.

Never has any textile mill been able to get so much for so little.

And never has competition been so tough. Never has outdated equipment been such a liability, such an open invitation to diminishing returns.

Yet surveys show that a dangerously high percentage of pre-war equipment is still in use today.

What are you waiting for? The time is right. Prices are right. Terms are right. It's high time to modernize, *now* . . . for the future of *your* mill.

VEEDER-ROOT VR
INCORPORATED
HARTFORD 2, CONN. • GREENVILLE, S. C.
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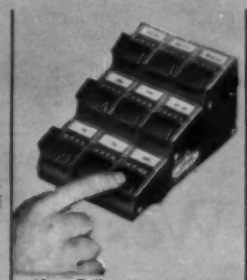
. . . and here's why it's wise to make sure all your New Machines are equipped with NEW VEEDER-ROOT COUNTERS . . .

Modern Veeder-Root Counters . . . for looms, frames, knitting machines and all types of textile mill equipment . . . are built with unmatched Veeder-Root know-how and quality to give accurate facts-and-figures through years of trouble-free service. Count on Veeder-Root for *closest* Countrol of production and uniformity. Write Veeder-Root for all your counter needs.

2-3-4 Convertible Counters for looms, frames, knitting machines, etc.

Loom Cut Meters for controlling uniform cuts of cloth.



Vary-Tally Multiple Unit Reset Counters for inventory, inspection, and 1,001 other hand-counting jobs.

Double-Wheel Linear Counter for indicating lengths in feet, yards, etc.

6000 motor-torturing "bang-offs"

Draper tests simulating many years' service prove Westinghouse clutch brake loom motor durability

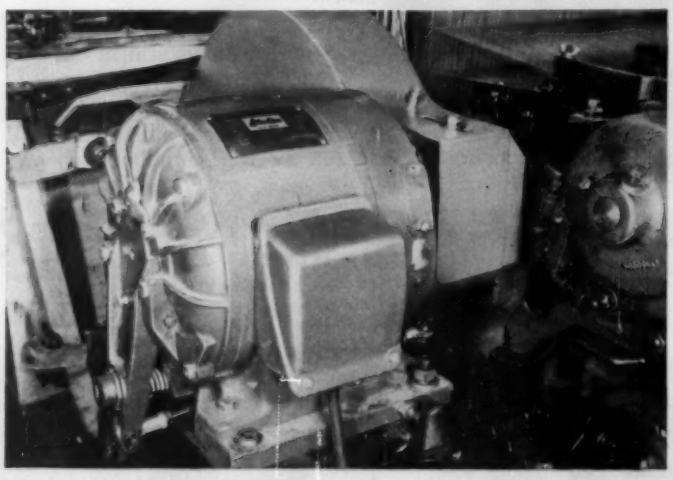
Here's the kind of stamina you need in your Draper loom drive to keep production humming.

Cork friction rings bonded to both sides of the sturdy clutch plate in the Westinghouse clutch brake motor give long life and quick, sure stops. High-inertia rotor and integrated clutch plate and shaft mounted on oversize, heavy-duty roller bearings provide top-notch performance under continuous loom operation.

Simplified design of this motor provides easy servicing. It takes just 45 minutes to tear down and reassemble . . . with standard wrench. No need to buy and lug around a 60-pound box of special tools to work on Westinghouse clutch brake loom motors.

Other Westinghouse motors for the textile industry include open and fan-cooled lint-free motors; Life-Line® "A" loom motors and Gwaltney spinning frame motors. For complete facts about dependable power for your plant call your Westinghouse sales engineer or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-22038



YOU CAN BE SURE... IF IT'S

Westinghouse

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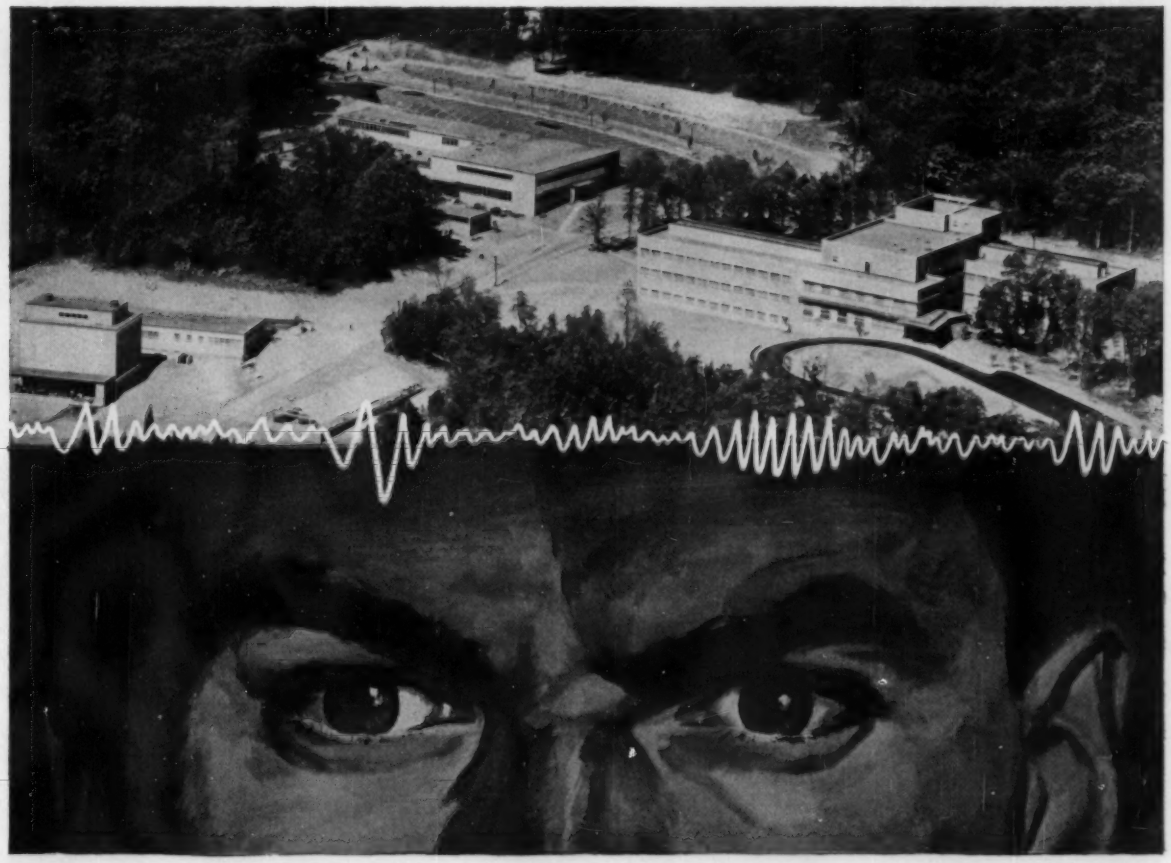

Here, creative minds will shape the future

Yes, here in the new Research Center of United States Rubber Company the probing minds of chemists and other scientists will find the ideal environment for conceiving new ideas...the finest facilities for bringing them into reality. Located on a 100-acre tract in suburban Wayne Township, New Jersey, the Center is a concrete symbol of the basic importance of Research in this company's past, present and future.

Significantly, at least 25 of U. S. Rubber's major product lines have been developed within the past twelve years.

As the Chemical Division of U.S. Rubber, Naugatuck Chemical continues to contribute a generous portion of new and improved products... such as its ready-to-use latex/resin compounds (Lotols®) for back-sizing pile or tufted fabrics and carpets.

Such developments stem not only from our research laboratories at Naugatuck, but also from Naugatuck's agricultural research facilities at Bethany, Connecticut, and the laboratories of our Canadian affiliates, Naugatuck Chemicals and Dominion Rubber Company, Ltd. Now, Naugatuck's research will be substantially augmented—and perhaps channeled in radically new directions—by the more fundamental research carried on at the new Research Center.

In the future, even more than in the past, look for the name Naugatuck to identify *the newest and the finest* products in their respective fields!

US RUBBER

United States Rubber

Naugatuck Chemical Division, NAUGATUCK, CONNECTICUT

Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices

BRANCHES: Akron • Boston • Gastonia, N. C. • Chicago • Los Angeles • Memphis • New York • Philadelphia • **CANADA:** Latex Div., Dominion Rubber Co., Ltd., Montreal • **CABLE:** Rubexport, N.Y.

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Know your AIM*...Indian Head Mills, Inc. does...

Steel Strapping Machine closes textile boxes

Acme Idea Man J. B. Quarles cooperated with Indian Head Mills, Inc. on this modern installation.

INDIAN HEAD MILLS, INC., Cheraw, South Carolina, uses an Acme Steel Model F1 Semi-Automatic Strapping Machine to close and reinforce boxes of their well-known, quality, "Indian Head" brand textiles. Now, only one man is required for the strapping operation . . . a saving of 8 to 12 man hours per day. (Idea No. S5-5)

Served by a conveyor system, the F1 applies as many steel straps as desired in a matter of seconds with uniform, pre-determined tension. Electrically powered, the machine is controlled by push-buttons. Strap is cut automatically, and ends are instantly and permanently joined by spot welds. The machine handles containers of various sizes in any sequence without adjustment. A special track feeds the strap to within easy operator reach.

***Know your Acme Idea Man.** He is sure to provide clues to better ways of protecting and shipping your products. Call him today at a nearby Acme Steel office. Or write Dept. TAS-117, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Ave., Toronto 13, Ontario.

ACME STEEL **STEEL STRAPPING**

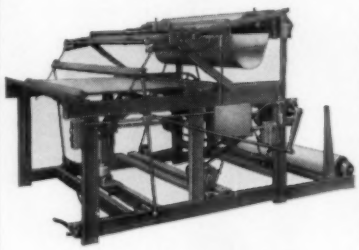
To help you choose with certainty the right white, CIBA has devised the Dial-a-Fiber Chart for ready reference so that you may select the UVITEX® Optical Brightener most suitable to your needs. Nothing else like it, you can "dial" by fiber type and quickly find at your fingertips all the basic information and specialized UVITEX properties you require for evaluation.

Ask your CIBA representative for your Dial-a-Fiber Chart, or write, CIBA Company Inc., 627 Greenwich St., New York 14, N. Y.

CIBA

HIGH PILE NAPPER

For looped knitted goods used for linings and simulated fur fabrics. Better finishing results with fewer operations



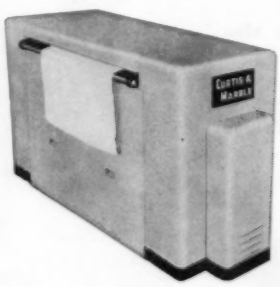
M-125 CLOTH FOLDER

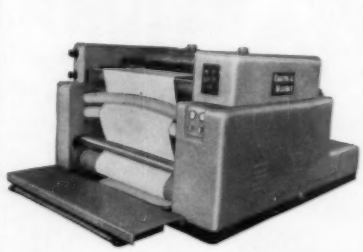
Less floor space; less moving parts with new electro-dynamic brake. Up to 8" drop plus power unrolling

Your alertness to the technological advances made in our textile machinery helps you to keep ahead of competition. New Curtis & Marble cloth finishing machines give you more production per man hour—better quality finishing. Our suggestions often improve cloth room operation and thus strengthen your competitive position. A talk with us could prove mighty profitable to your mill.

M-125 BRUSHER

Better brushing at higher speeds and companion machine to M-125 Shear. 8 interchangeable cylinders completely encased





M-125 SHEAR

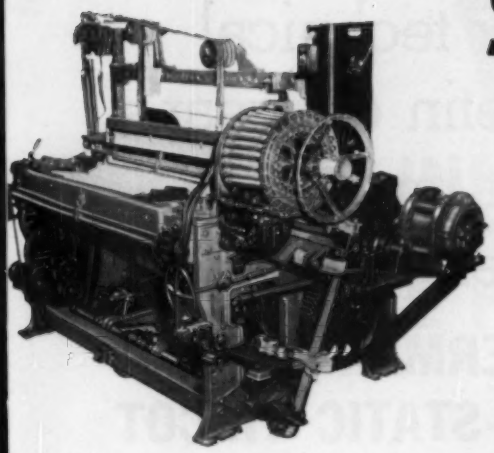
Most advanced Shear design in years for cottons. Gives top quality shearing at higher speeds. Reduces maintenance and operational costs

CURTIS & MARBLE MACHINE CO.

Serving the Textile Industry for more than 125 years

72 CAMBRIDGE STREET • WORCESTER 3 • MASSACHUSETTS

SOUTHERN SALES & SERVICE • SOUTH CAROLINA NATIONAL BANK BUILDING, GREENVILLE, S.C.



Stehedco
presents

The **REINFORCED**

DURAWELD
PICKER STICK

with this Unexcelled Combination.....
Strength and Whip, plus Resistance to Warping

Here is another Stehedco *exclusive*... a picker stick that gives you advantages never before available.

★ **DURAWELD Picker Sticks are made of multiple laminated veneers of *high grade hickory* reinforced with veneers of vulcanized fiber, permanently bonded with phenolic adhesive into a uniform panel.**

★ **This construction gives DURAWELD Picker Sticks *far greater strength* while retaining the desired *"whip"* for high-speed looms.**

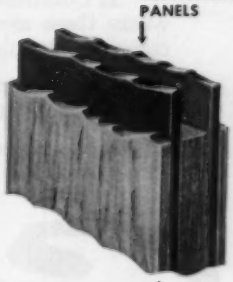
★ **These laminated, reinforced picker sticks are much *less susceptible to warping* than ordinary picker sticks.**

★ **Stehedco DURAWELD Picker Sticks will pay for themselves many, many times with *superior performance* and *longer life*.**

★ **Designed for high-speed Draper looms, these picker sticks also give superior performance on slower single box and light multiple box looms.**

★ **The exposed, or nearly exposed, fiber at the picker end of the stick provides greater wear resistance to the lay end slot.**

Invest in Reinforced DURAWELD Picker Sticks now and start counting your savings.



Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

P-5725

QUALITY Stehedco CONTROL

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

New technical bulletin on year's most important development:

PERMANENTLY ANTI-STATIC TRICOT

New Celanese Bulletin TD-16 covers "Dyeing, Finishing and Anti-Static 'S' Processing of Tricot from Arnel." The information comes from two sources:

1. Celanese development laboratories where these methods have been proven on a commercial scale.

2. The accumulated experience of commercial dyers and finishers of tricot of Arnel.

If you are concerned with processing tricot of Arnel, send for bulletin TD-16 today.

Celanese® Arnel®

Celanese Corporation of America, Textile Division, Charlotte, N. C.

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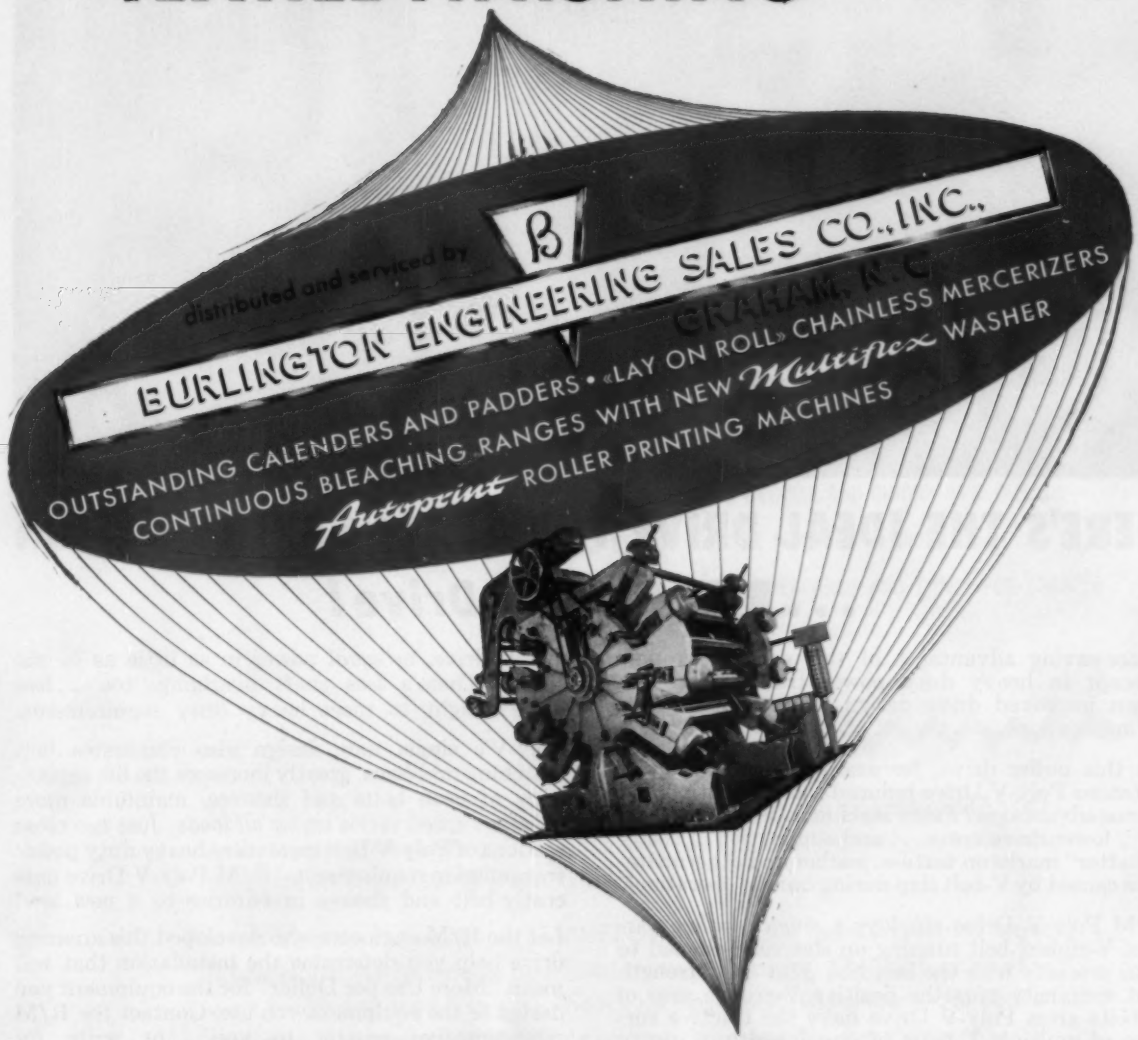
Ready now!

KLEINEWEFERS
Machines and Installations for
TEXTILE FINISHING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OUTSTANDING CALENDERS AND PADDERS • «LAY ON ROLL» CHAINLESS MERCERIZERS
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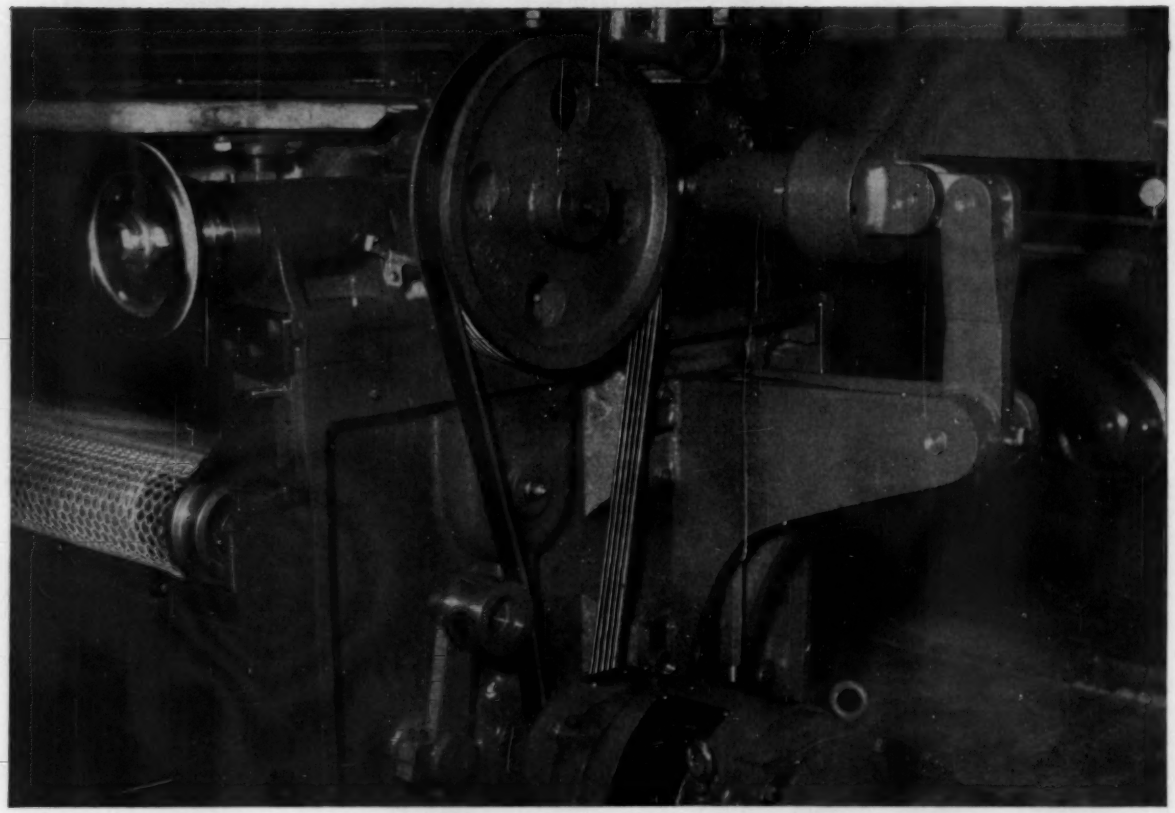

HERE'S THE IDEAL DRIVE FOR SPACE SAVING DESIGN

. . . R/M *Poly-V®* Drive!

Space-saving advantages of this completely new concept in heavy duty power transmission can mean improved drive design for a wide variety of applications.

On this buffer drive, for example, installation of patented Poly-V Drive reduced sheave width 50%! Bonus advantages? *Faster* machine operating speeds, 20% lower drive costs . . . and elimination of costly "chatter" marks on textiles, leather and other materials caused by V-belt slap during buffing operations.

R/M Poly-V Drive employs a *single, endless* parallel V-ribbed belt running on sheaves designed to *mate precisely* with the belt ribs. Flat belt strength and simplicity *plus* the positive V-groove grip of V-belts gives Poly-V Drive *twice* the tractive surface of multiple V-belts of equal width . . . up to 50% more *power delivery* in the same space as a V-belt drive, or *equal* power in as little as ⅔ the space! There's less shaft overhang, too . . . less drive weight to meet heavy duty requirements.

Poly-V's single unit design also eliminates belt matching problems, greatly increases the life expectancy of both belts *and* sheaves, maintains more constant speed ratios under *all loads*. Just *two* cross sections of Poly-V Belt meet *every* heavy duty power transmission requirement—R/M Poly-V Drive cuts costly belt and sheave inventories to a new low!

Let the R/M engineers who developed this amazing drive help you determine the installation that will mean "More Use per Dollar" for the equipment you design or the equipment you use. Contact the R/M representative nearest to you . . . or write for Poly-V* Drive Bulletin #6638.

**Poly-V is a registered Raybestos-Manhattan trademark.*

RM735

BELTS • HOSE • ROLL COVERINGS • TANK LININGS • INDUSTRIAL RUBBER SPECIALTIES

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products: Abrasive and Diamond Wheels • Brake Blocks and Linings • Clutch Facings • Asbestos Textiles • Mechanical Packings • Engineered Plastics • Sintered Metal Products • Industrial Adhesives • Laundry Pads and Covers • Bowling Balls

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STANSET

FOR Standout Wash 'N Wear

with Stanset chemical reactor resins, your fabrics:

- ACHIEVE MECHANICAL AND CHEMICAL FINISHING EFFECTS WITH LASTING WRINKLE AND SHRINK RESISTANCE.
- STAND UP AFTER REPEATED LAUNDERINGS.
- RETAIN THEIR APPEARANCE AND SHAPE FOR GREATER LENGTH OF TIME.
- "LOOK YOUNGER LONGER."

Many of STANSET's friends are enthusiastic about the above features of STANSET and also about the extremely low tensile loss due to chlorine bleaching, as well as its superior, non-yellowing characteristics.

There are other features about STANSET chemical reactor resins *you should know.* If you would like to receive additional material regarding STANSET, write us — we'll be glad to send it to you. There's no obligation. Remember — the sooner you learn about all of STANSET's excellent characteristics, the sooner you can put them profitably to work for you.

STANDARD CHEMICAL PRODUCTS INC.

HOBOKEN, NEW JERSEY • CHARLOTTE, NORTH CAROLINA

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Helping you handle chemicals with greater safety

The great safety record of the Chemical Industry is inspiring proof that chemical users, as well, can institute and carry out effective safety programs.

As a helpful contribution to this effort, Olin Mathieson has prepared a series of safety wall charts on . . .

CHLORINE • LIQUID CAUSTIC • SULFURIC ACID
ANHYDROUS AMMONIA • NITRIC ACID

These wall charts will keep your employees constantly posted on correct handling procedures, on basic precautions to be observed, and on first aid methods when emergencies *do* occur.

We will gladly send you the safety charts you need without obligation.

MATHIESON CHEMICALS
OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

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MATHIESON

Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Ethylene Diamine • Formaldehyde
Hexamine • Hydrazine and Derivatives • Hypochlorite Products • Methanol • Muriatic Acid • Nitrate of Soda • Nitric Acid
Polyamines • Soda Ash • Sodium Chlorite Products • Sodium Methylate • Sulfate of Alumina • Sulfur (Processed) • Sulfuric Acid

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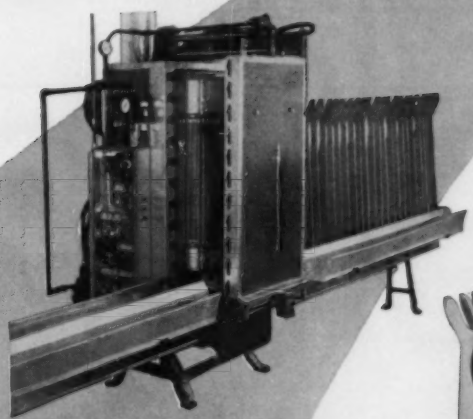
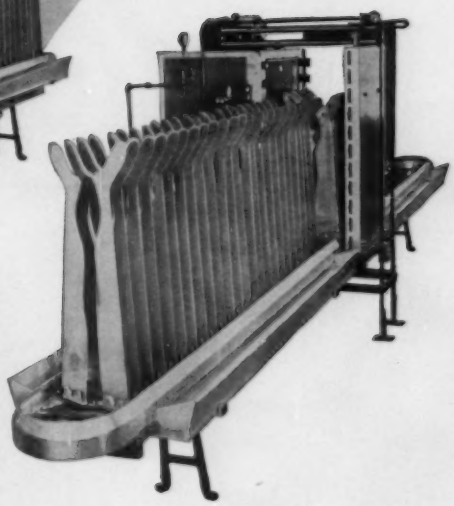
Turbo Push Buttons Stop Guesswork

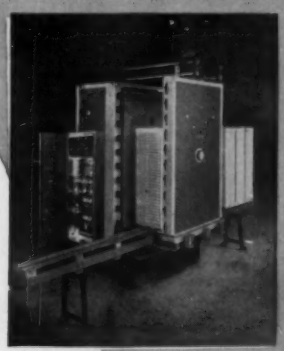




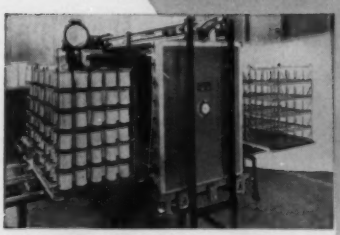
Above: Turbo ADS-48 Combination Preboarder/Finish Boarder, a single operator machine with 48 forms.

Right: Turbo ADS-96 Combination Preboarder/Finish Boarder, a two operator, double track machine with 96 forms . . . does the work of two preboarders and two finish boarders.

These hosiery setting machines with 4-cycle operation (preheating — air expulsion — steaming — drying) are designed for complete control of finishing according to the after-dyeing method of plasticizing all types of hosiery or garments.



Turbo FS-60 Fiber and Yarn Setter



Turbo FS-300 combination all-purpose Steam Setter adaptable to setting yarns, fibers, sweaters and other fabrics.

Turbo Setters feature automatic controls to assure high-quality results with every load. Available in stock machines or built to order.

Sweaters and socks — stockings and panties — fibers and fabrics — whenever setting is part of the finishing operation, do it automatically on a Turbo.

Temperatures, timing and production cycles are pre-determined — then push buttons take over. There is no guesswork, each lot is identically set for unvarying high quality. Operators merely load and unload forms or carriers.

Standard machines are available, or we'll custom make equipment to meet your particular problem. Call or write for details.

TURBO
SINCE 1929

TURBO MACHINE COMPANY

LANSDALE, PA.

"Builders of Precision Machines for a Quarter Century"

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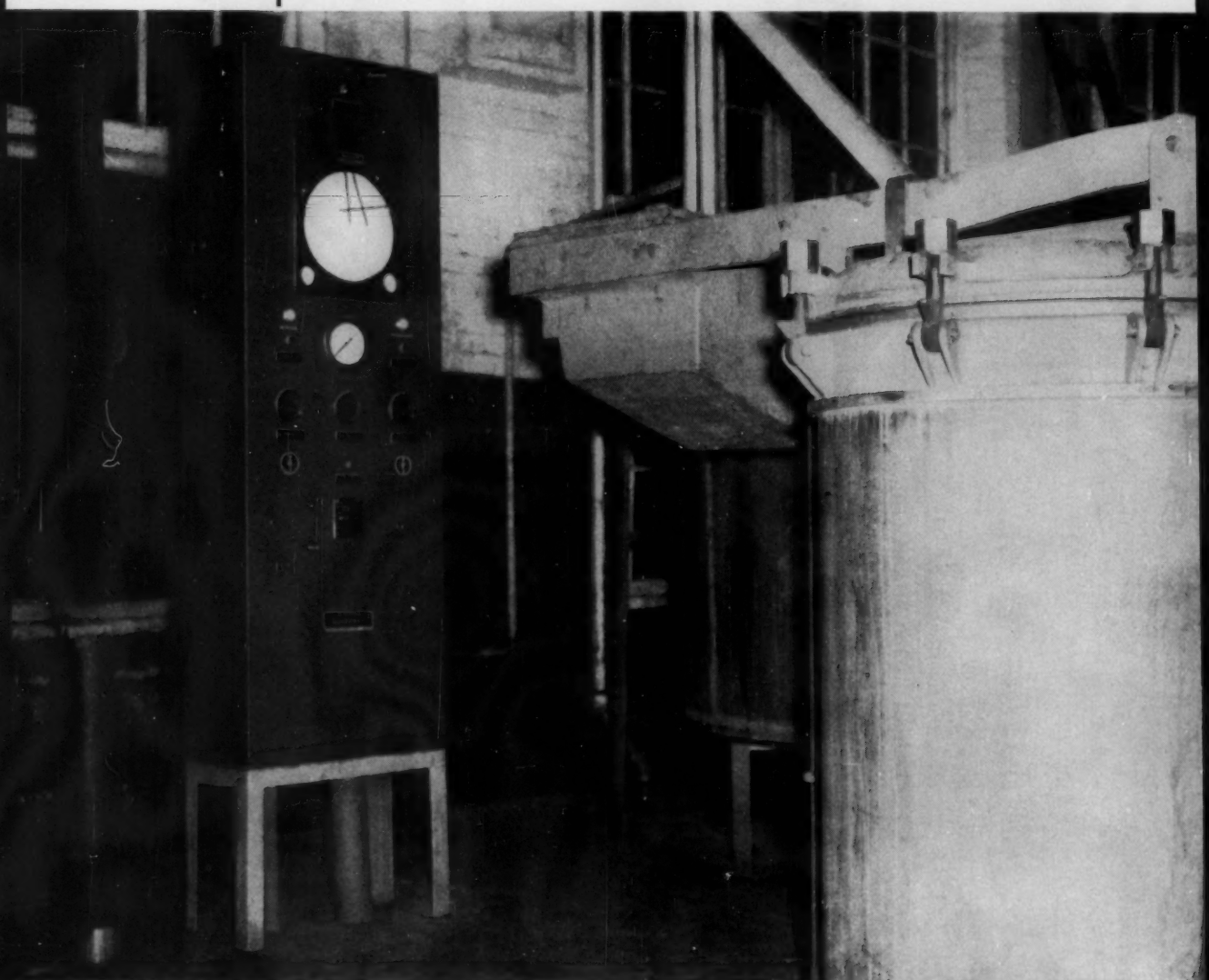
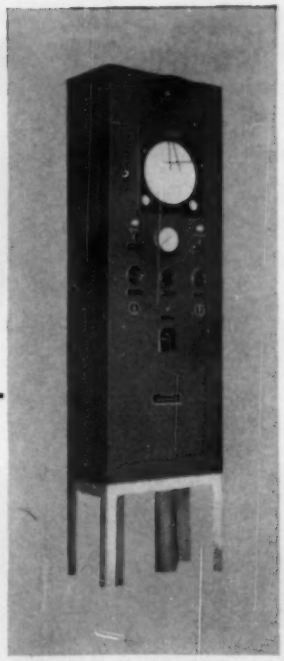
Get the exact dyeing in every batch...

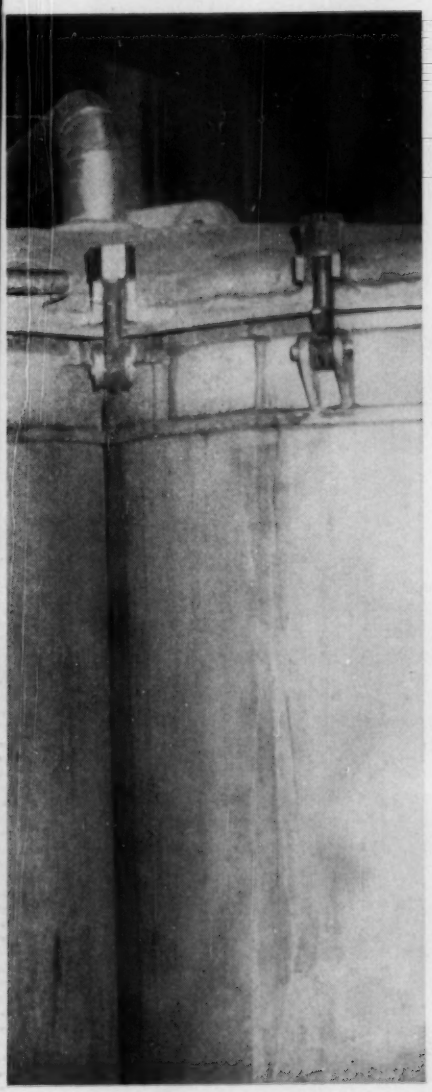


This Honeywell dyeing control system automatically regulates a package or beam dyer by a simple timing mechanism, and gives a permanent record of dyeing time and temperature.

you want

with HONEYWELL *controls*





TAKE the guesswork out of your dyeing operations—and be certain of batch-to-batch uniformity—by controlling your dyers with Honeywell instruments.

These simple, dependable controls automatically regulate dyeing time and temperature . . . put your process on a precise, program basis.

You'll get *better* dyeing at lower cost, as well as uniformity, because these controls let you keep dye temperature high without risk of boiling. No need for an operator to keep constant watch over the process.

Honeywell dyeing control systems are completely flexible to accommodate any dyeing program. Get complete details from your nearby Honeywell field engineer. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

H HONEYWELL

First in Controls

Announcing

Cocker's Unit Construction Heavy Duty Padder

Unit construction—heavy cast iron frames—heavy duty, self-aligning roller type roll bearings—and 16" diameter main rolls permit direct loading up to 10 tons. This Cocker machine is unexcelled for heavy duty padding of dyes, starches, and finishes.

Either low or high capacity 3/16" stainless steel jacketed pans can be furnished with open or with closed coils. Integral mounted expander rolls and cloth guides attached to the machine can be furnished with open or with closed coils. Integral mounted expander rolls and cloth guides attached to the machine can be furnished if desired. Available in widths up to 120 inches.

We will be glad to give you full information on this new Cocker machine.

THE LEADER AROUND THE WORLD

COCKER Machine and Foundry Co., Gastonia, N. C.

Plant and Offices at Ranlo, N. C. (Mailing address, Gastonia, N. C.)

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

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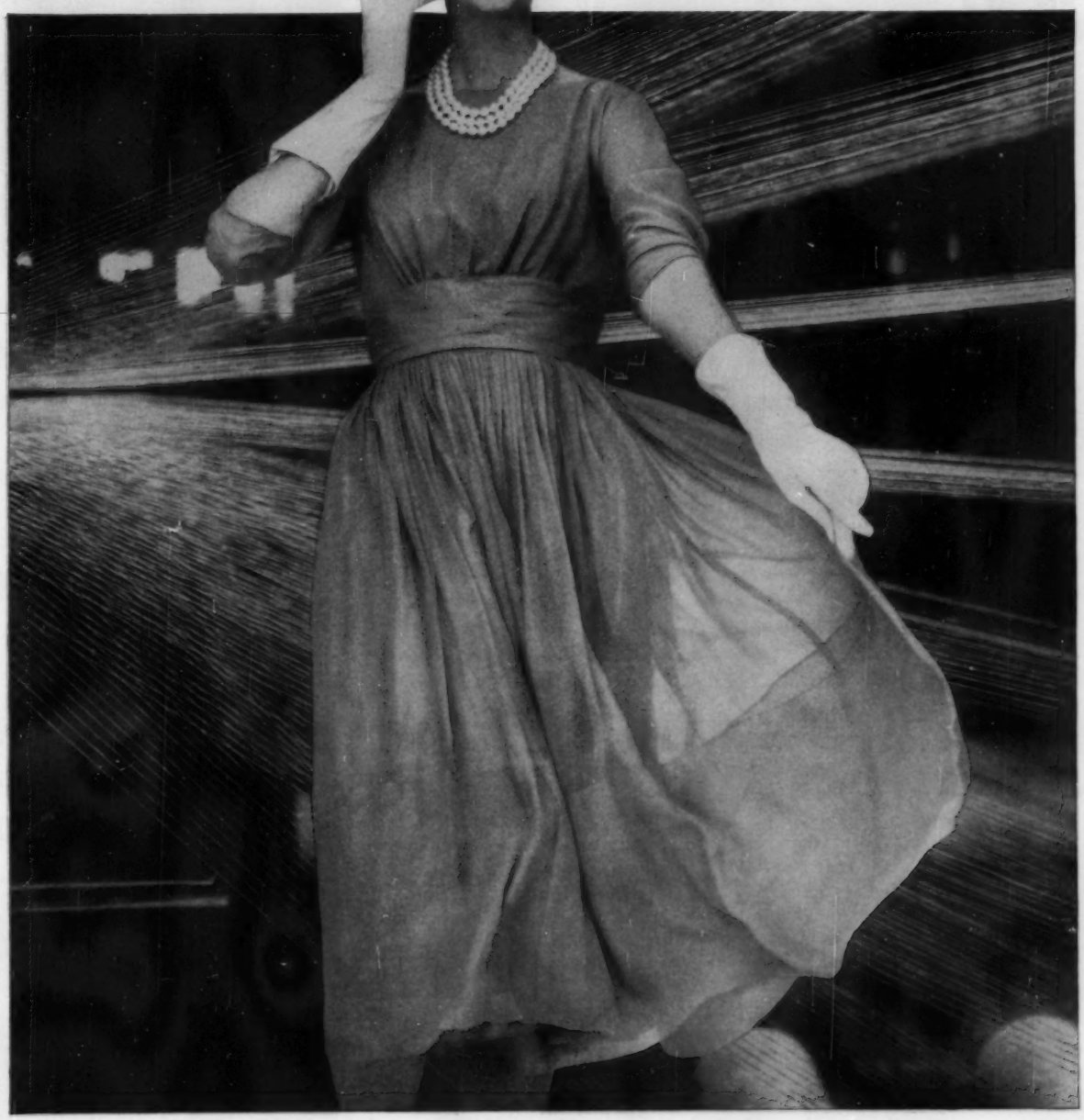
Unseen thread in the world's finest fabrics . . . What is the common thread that runs unseen through the fabrics of great American mills? It's the unique contribution of Gulf Petro-engineering Service. It helps men responsible for mill efficiency keep abreast of new developments in petroleum products and their application. It gives you up-to-date answers to problems involving maintenance, lubrication, processing, fleet operation . . . helps you improve production and save money. Gulf Petro-engineering Service costs you nothing. How do you get it? Phone your nearest Gulf office, and ask a Sales Engineer to call. He's your direct link to Gulf's technical specialists and modern research facilities.

Gulf Oil Corporation
1822 Gulf Building, Pittsburgh, Pa.

GULF



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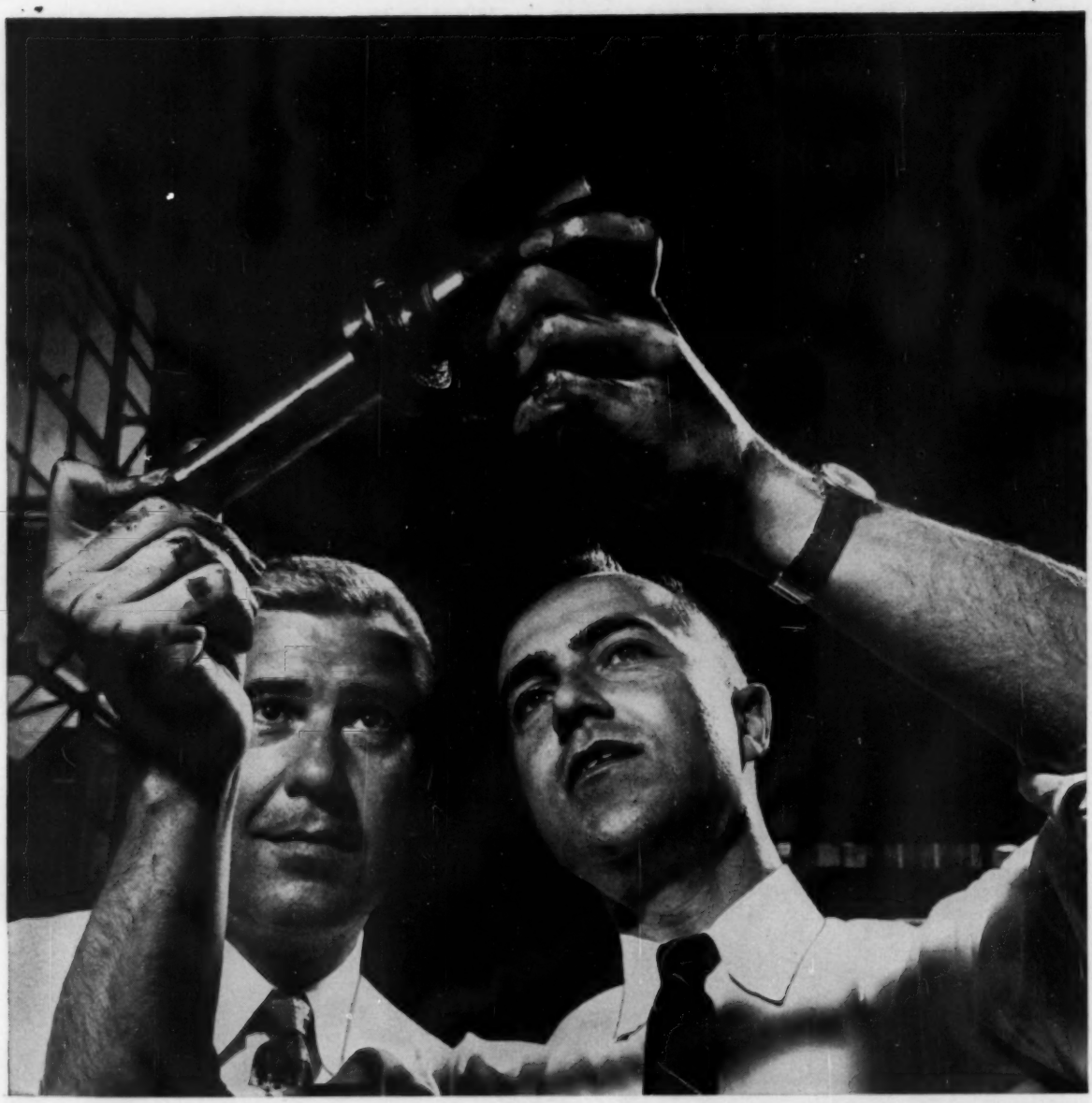

Executives with dirty hands

Their hands aren't dirty because they're careless. They're dirty from working in textile mills on all kinds of problems. When trouble breaks, they don't stand idly by and merely suggest what may be wrong.

They find the answer by rolling up their sleeves and working side by side until the problem is licked. Who are they? One is an overseer—perhaps one of your overseers. The other is one of Staley's Textile Field Representatives.

Their broad experience, their technical knowledge qualify them as experts by any standard. Working together, they form an unbeatable team.

Yes, textile overseers know they can depend on Staley's for technical service. And just as important, they know, too, they can rely on Staley's for a complete line of tailor-made starches, gums, and dextrins . . . second to none.

Next time you have a textile problem—won't you call the Staley's Textile Representative at the branch office nearest you?

Staley's®

World's Largest Processor of Corn and Soybeans

A. E. Staley Mfg. Co., Decatur, Illinois

Branch Offices: Atlanta · Boston · Chicago · Cleveland
Kansas City · New York · Philadelphia · San Francisco · St. Louis

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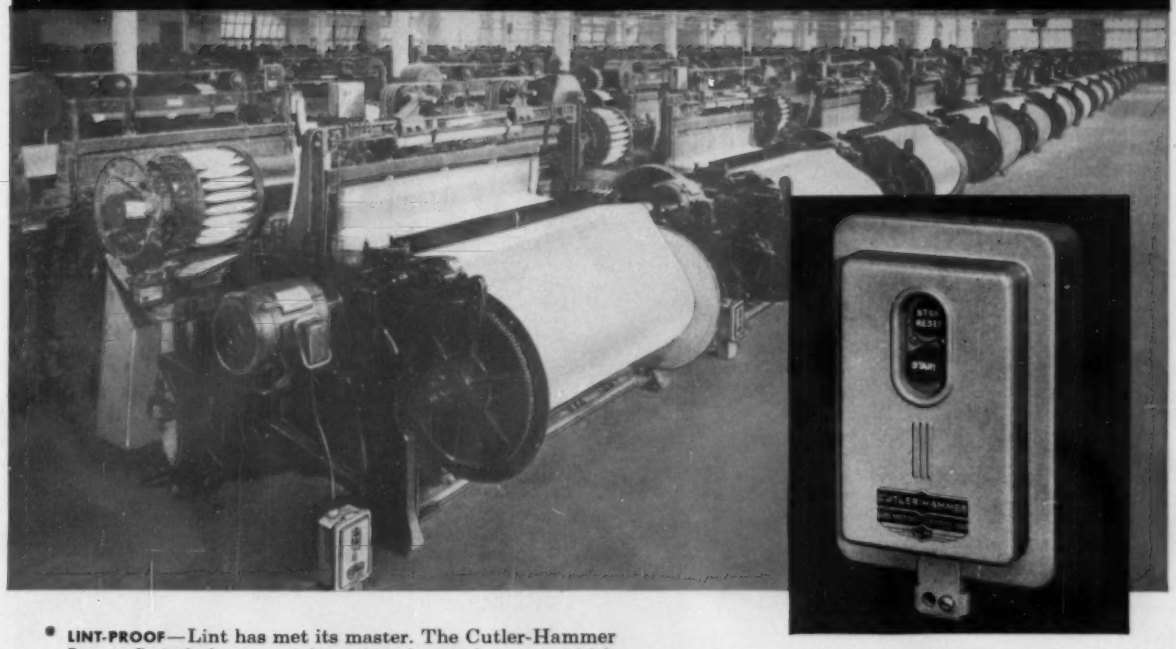
KEEP YOUR LOOMS WEAVING with the DEPENDABLE CUTLER-HAMMER LOOM SWITCH



- **LINT-PROOF**—Lint has met its master. The Cutler-Hammer Loom Switch has a triple-gasketed switch cover which clamps securely to the case and is drawn tight with a single captive cover screw.

- **DEPENDABLE OVERLOAD PROTECTION**—Stop costly motor burnout. The famous Cutler-Hammer eutectic alloy overload relay is free-tripping, tamper-proof and will work the loom motor at top efficiency . . . safely. No nuisance tripping.

- **SHOCK & VIBRATION PROOF**—The Cutler-Hammer Loom Switch is built to take it. The switch mechanism floats on live rubber bushings, sparing the mechanism from impact shocks and machine vibrations. A steel framework supports the all-steel operating mechanism . . . all enclosed in a tough, drawn steel case and cover.

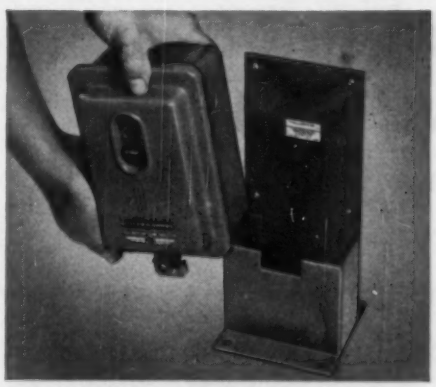
- **EASIER INSTALLATION & INSPECTION**—Loosening a single captive cover screw separates the cover from the case for complete wiring freedom. All terminals are out-front where you can get at them, and are clearly marked for rapid identification and positive wiring. Heater coils are easily inserted and marked for accurate selection.

- **RESISTS CORROSION**—The Cutler-Hammer Loom Switch uses plated steel members and springs of stainless steel to resist corrosion. The case and cover are bonderized, assuring a life-time of rust resistance even in the high temperature and humidity of the weave room.

For complete information see your authorized Cutler-Hammer Distributor or write on your company letterhead for Pub. EL-115, Cutler-Hammer Motor Control for Textile Machines. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

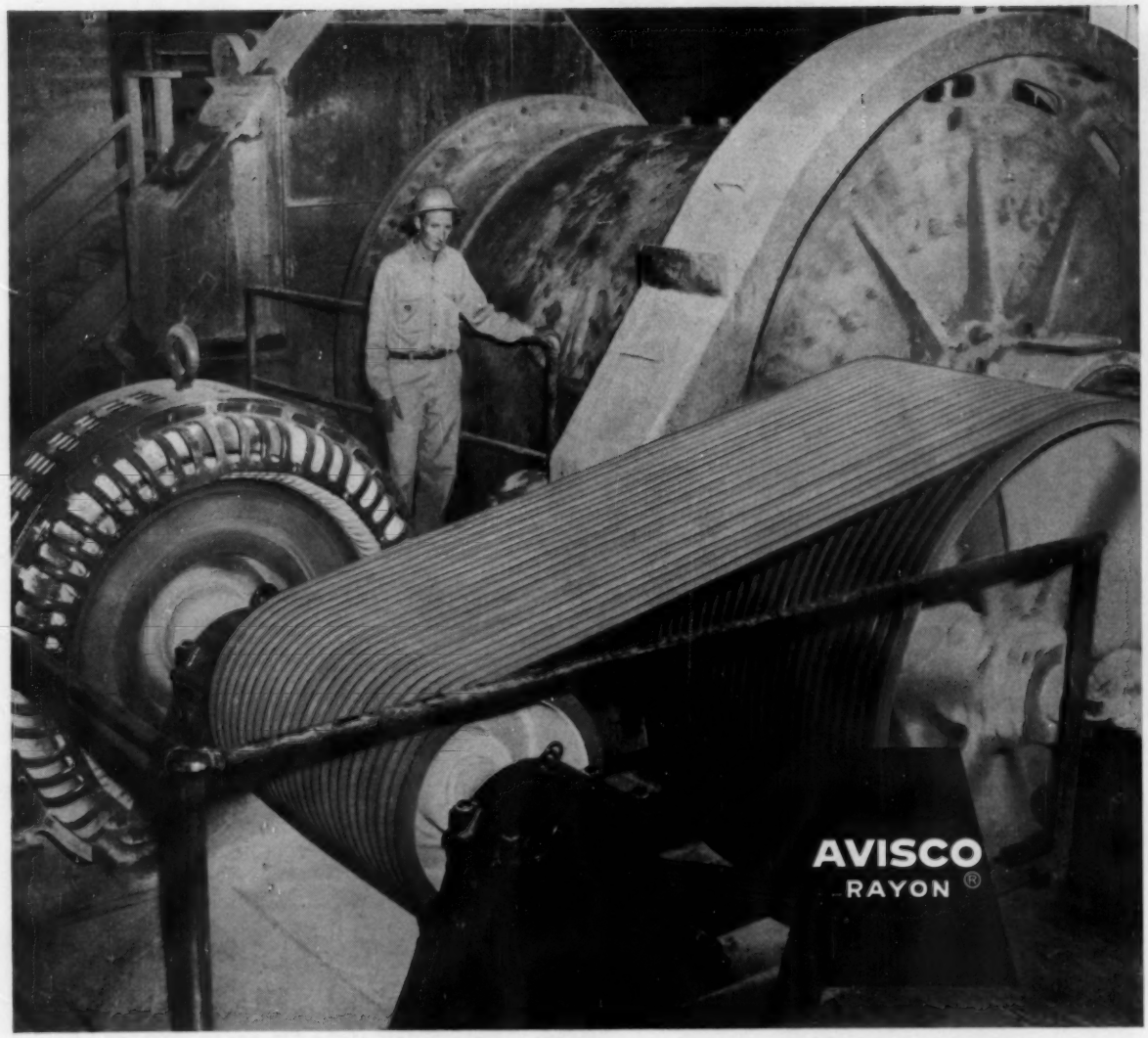
CUTLER-HAMMER
MOTOR CONTROL
C-H

- **LINT-PROOF**
- **DEPENDABLE OVERLOAD PROTECTION**
- **SHOCK & VIBRATION PROOF**
- **EASIER INSTALLATION & INSPECTION**
- **RESISTS CORROSION**
- **HIGH-BACK STEEL PEDESTAL**



- **HIGH-BACK STEEL PEDESTAL**—This high-back, steel pedestal provides a solid foundation for floor mounted loom switch . . . it supports the switch from top to bottom, not just at the bottom. Being made of steel (not cast iron) it won't crack off when accidentally struck by a warp truck or kicked.

For more data, write this page number on Reader-Service card. →



Six years of continuous operation, without losing an hour. They're B. F. Goodrich Multi-V belts, with Avisco rayon as tough reinforcing "muscle," and they promise to last many more years. This performance since 1951, under conditions requiring greatest strength, flexibility and freedom from elongation, may suggest an application in your business. And remember, Avisco rayon gives greater strength per dollar than any other reinforcing material.

American Viscose Corporation

350 FIFTH AVENUE, NEW YORK 1, NEW YORK

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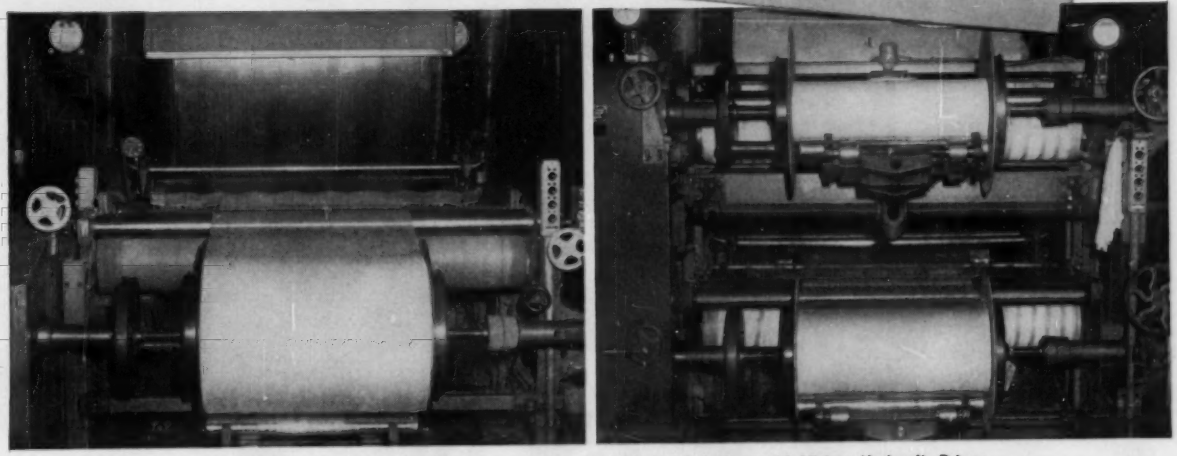
VICKERS® HYDRAULIC SLASHER DRIVES

WIND BETTER LOOM BEAMS FASTER

For

ANY TENSION • ANY SPEED • ANY SET
ANY YARN • ANY DIAMETER • ANY WIDTH
ANY HORSEPOWER • ANY DOUBLE HEAD
ANY SINGLE HEAD • ANY SLASHER



West Point Foundry & Machine Company single and double head slashers with Vickers Hydraulic Drives.

This is the slasher drive that can really meet *all* your needs . . . flexibility is sufficient to cover all known conditions of slashing. Now your yarn and your beams can be wound exactly the way you want them . . . and quality is always the same.

Design is unusually compact . . . the drive requires no floor space outside of the slasher head end frame dimensions. Automatic overload protection and dependability are important features. Completely sealed and inherently self-lubricated, there is no need for oiling and greasing.

ONLY VICKERS HYDRAULIC SLASHER DRIVES HAVE ALL THESE ADVANTAGES:

1. Better Tension Control
2. Complete Speed Range
3. Smoother Acceleration and Deceleration
4. Selective Creep Speeds
5. Better Response
6. Reduced Operating Costs

For further information about Vickers Hydraulics on slasher drives, write for Bulletin 55-71. For information regarding application of Vickers Hydraulics to general textile machinery, write for Bulletin 54-66.

VICKERS INCORPORATED
DIVISION OF SPERRY RAND CORPORATION
Machinery Hydraulics Division
ADMINISTRATIVE and ENGINEERING CENTER
Department 1588 • Detroit 32, Michigan

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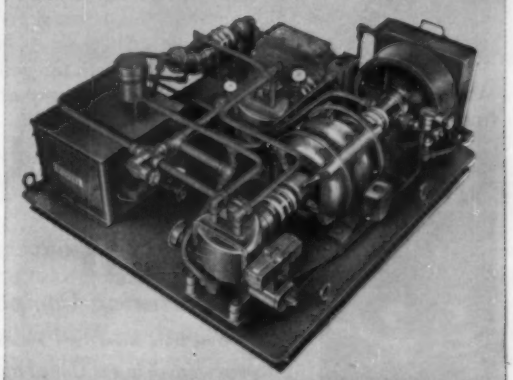
STANDARD VICKERS HYDRAULIC SLASHER DRIVE PACKAGE



ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

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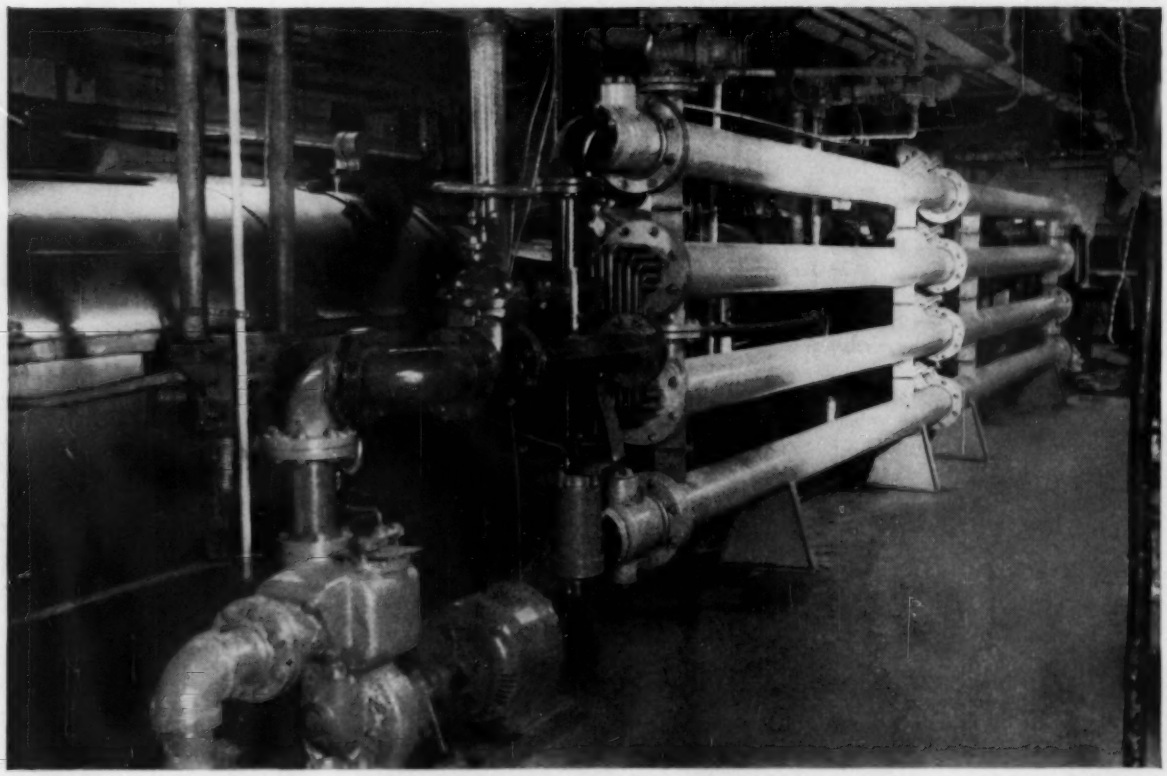


EXPERIENCE

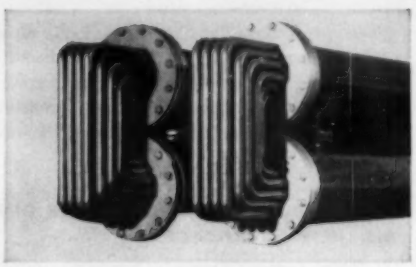
built Bready Systems of Waste Water Heat Recovery

Bready Systems of Heat Recovery are the result of thirty years of specialized engineering in the field of heat recovery from process waste water.

Experience of Ludell engineers in all the basic design types of heat reclaiming devices and the needs of the wet processing industries led to the development of these systems.

Today there is no other waste water heat recovery equipment that is the equal of the Bready System in trouble free maximum attainable heat recovery.

Have you investigated a Bready System for your plant? Write for free folder "What can the Recovery of HEAT from Your Plant's Waste Water do for You?"



The continuous tubes which identify a Bready System, combined with automatic backflushing, give guaranteed non-clogging, self-cleaning operation.

Ludell

Manufacturing Company

5200 West State Street • Milwaukee 8, Wisconsin

Representatives in the United States, Canada and Alaska

MANUFACTURERS OF

BREADY SYSTEMS OF HEAT RECOVERY, BREADY SYSTEMS OF HOT WATER HEATING, AND WHEELER SELF-UNLOADING WASHER

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Sandoz Directs . . .

for every combination of color value and fastness

When you choose Sandoz direct dyes, you can produce dyeings that meet every technical requirement —from excellent fastness properties and widest color range to maximum economy. For highest light fastness, investigate the Sandoz Lumicrease colors. For the most effective combination of wash and light fastness, look to the Sandoz Pyrazol Fast colors, or the Cuprofix dyes with Cuprofix aftertreatment. A magnificent line of resin-fast shades may be produced with these colors.

Sandoz products are sold and demonstrated by men who take a personal interest in your dyehouse problems. They offer the direct, personal service that a well finished fabric deserves. SANDOZ, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.

SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ

MAXIMUM PRODUCTION DEMANDS PRECISION TENSION CONTROL

The facts are in. The Uster Custom Tension Recordograph has proved the most critical factor in production speed is tension adjustment.

Developed by the Celanese Corporation of America to perform effectively on the production floor, the Uster Custom Tension Recordograph is built for heavy duty use, is easily operated by any qualified mill personnel and opens the door to major operating economies.

Write for performance booklet:

"SEIZE OPERATING ECONOMIES"

CONTINUOUS QUALITY CONTROL IN MANUFACTURING

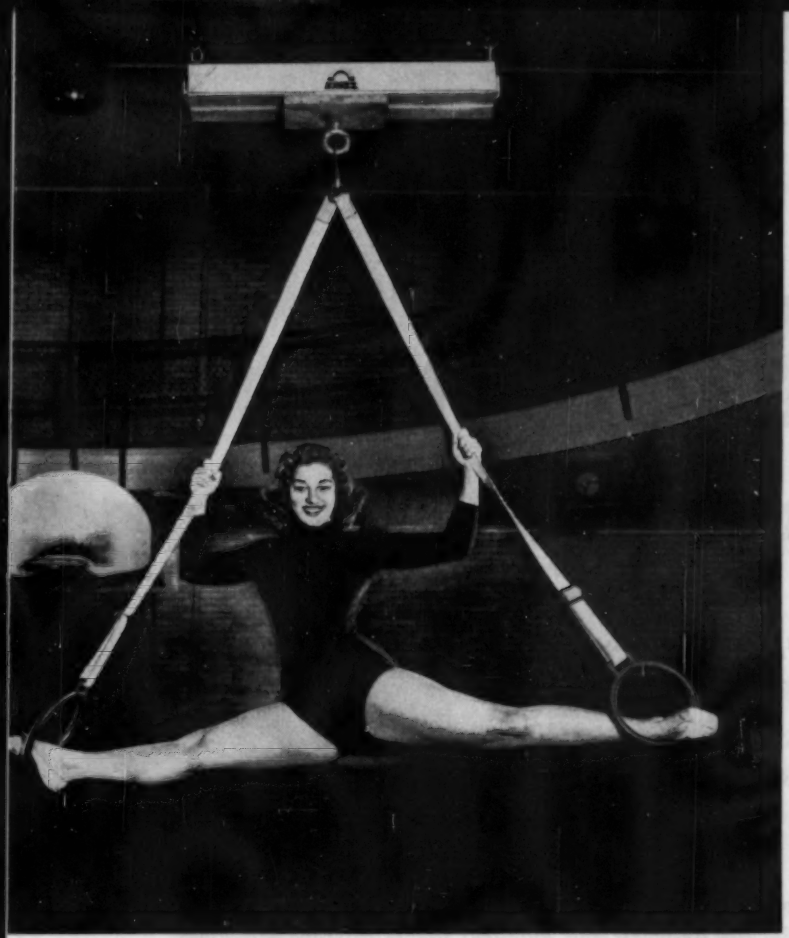
SALES OFFICES:

U. S. Sales Offices: Atlanta, Georgia; Needham Heights, Massachusetts

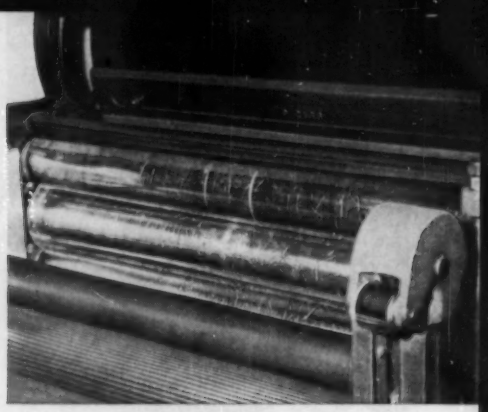
Canadian Sales Offices: Hugh Williams & Company, 27 Wellington St., East Toronto 1, Ontario

USTER CORPORATION
CHARLOTTE
NORTH CAROLINA

USTER



THE DARING YOUNG GAL ON THE ERIEZ TRAPEZE! Though she swings through the air with the greatest of ease, this pretty aerialist has nothing to worry about. Her rigging is held securely by an Alnico V magnet, hung from the ceiling of the gym. This idea of herculean magnetic power has found widespread acceptance in the textile industry, where permanent-powered magnetic separators are used in processing lines to remove tramp iron which could cause fires, machinery damage and production losses in cotton, woolen, rayon and waste mills. *All Eriez Magnets are non-electric, self-contained. They operate without any wires or attachments. Their magnetic power lasts a lifetime. The first cost is the only cost.*



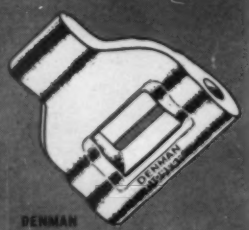
THE WOEFUL ROLE OF PICKER CALENDER ROLLS. When's the last time you checked your calender rolls? Did they look like those above . . . damaged by pieces of stray metal that left lasting impressions, and also damaged lickerin and card clothing? Chances are, your own equipment has also suffered because of spikes from aprons, ring travelers, nails, screws, bottle tops, etc. But now you can prevent machinery damage, reduce downtime, and eliminate poor card performance with an Eriez HI-POWR Permanent Non-electric Magnet. Why not invite an Eriez representative to look at your equipment? He'll be glad to survey your plant and recommend one of the many Eriez HI-POWR Magnets designed specifically for the textile industry.

ERIEZ HI-POWR MAGNETIC SEPARATORS

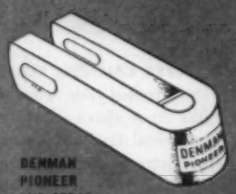
MAGNETIC IDEAS FROM ERIEZ

Eriez' free booklet "Magnetic Ideas" can help you. Send for it without obligation. ERIEZ MANUFACTURING COMPANY, 101Y Magnet Drive, Erie, Pa. OR, on your specific request Eriez factory-trained field men backed by Eriez' laboratory and engineering know-how, will be happy to study your particular problem, make a plant survey and offer helpful "Magnetic Ideas".

PICKERS AND PROCESSING EQUIPMENT POLICED BY HI-POWR PLATE MAGNETS! No danger of stray metal damaging the pickers, card and special processing equipment of the Chicopee Manufacturing Corporation, Ark., producer of more than 250 types of non-woven fabrics. Three Eriez HI-POWR Plate Magnets, each installed just above a spiked apron, are removing approximately one pound a month of wire, nails, bottle caps broken apron spikes and other tramp iron from the raw material which includes absorbent cotton, rayon, nylon and card returns. According to the Chicopee people, the Eriez Magnets have saved approximately $5,000 yearly in machinery damage and loss of production caused by downtime.

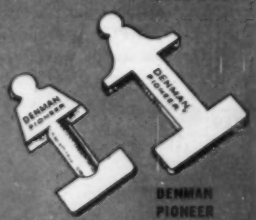


DENMAN PIONEER DROP BOX REVERSIBLE PICKER

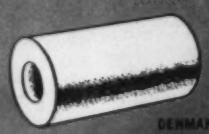


DENMAN PIONEER LUG STRAP

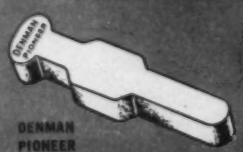
DENMAN PIONEER SWEEPSTICK



DENMAN PIONEER HOLD-UP STRAP



DENMAN PIONEER SPINDLE ROD BUMPER



DENMAN PIONEER DOLL PICKER

DENMAN PIONEER BOBBIN STRIPPER BLADE

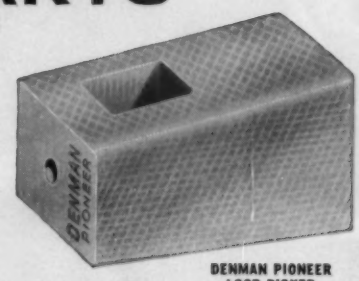
SPECIFY THE ORIGINAL

Denman

PIONEER LOOM PARTS

Compounded For Smooth, Dependable Performance . . .

Longer Life And Greater Resistance To Shock!



DENMAN PIONEER LOOP PICKER

For more than 20 years Original Denman Pioneer Loom Parts have set new standards for smooth, dependable performance. They are scientifically designed and moulded to absorb repeated loom shocks with little or no adjustment . . . need replacement only after longer-than-average service. To cut costs, step up production, specify Original Denman Pioneer Loom Parts . . . they are built for rugged use and a longer "prime of life"!

Ask The DENMAN Sales Agent Nearest You . . .

FOR VIRGINIA, NORTH and SOUTH CAROLINA:
THE KARL H. INDERFURTH CO., INC. (Exclusive Selling Agent and Warehouse)
P.O. Box 6161, Charlotte, N. C.

FOR GEORGIA, ALABAMA, and TENNESSEE:
R. E. L. HOLT, JR. & ASSOCIATES, INC., Drawer 1319, Greensboro, N. C.
Resident Agent: John P. Norman, P.O. Box 445, West Point, Ga.

FOR CENTRAL ATLANTIC and NEW ENGLAND STATES and CANADA:
TEXPLANT CORPORATION, 695 Summer Street, Stamford, Conn.

FOR THE MIDDLE WESTERN STATES:
ALBERT R. BREEN, 80 E. Jackson Blvd., Chicago 4, Ill.

FOR THE SOUTH WESTERN STATES:
R. D. HUGHES COMPANY, 9425 Garland Road, Dallas, Texas

Other Representatives Throughout the World . . . Or Write

DENMAN TEXTILE RUBBER COMPANY

2828 Second Street • Cuyahoga Falls, Ohio

NEW YORK • PHILADELPHIA • CHARLOTTE, N.C. •

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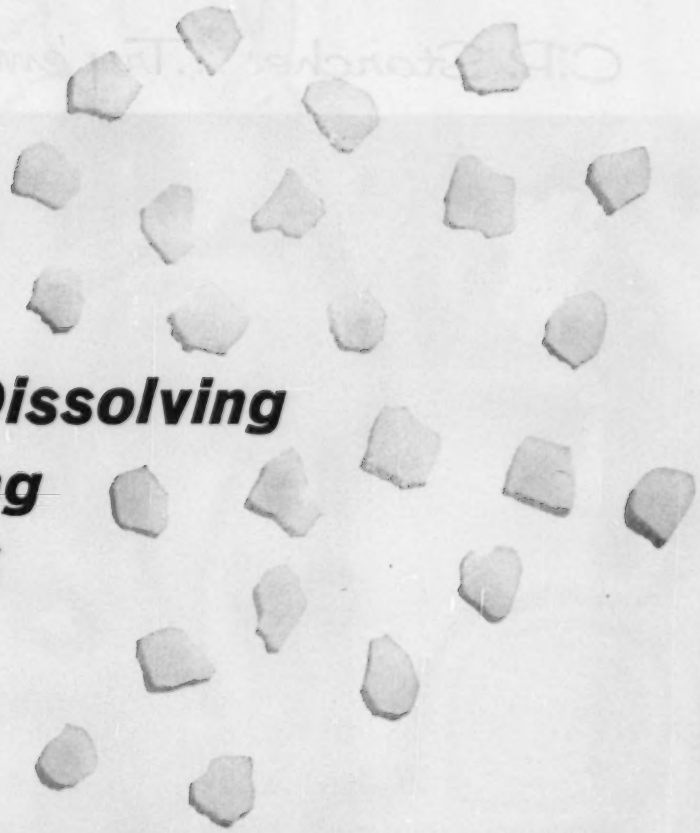

NOW!
In Quick-Dissolving Non-Caking FLAKES

SOLVAY ANHYDROUS U.S.P. *FLAKE* SODIUM NITRITE

Now available at no increase in price—anhydrous U.S.P. sodium nitrite in an exclusive time and labor saving *flake* form! For the first time you can get anhydrous sodium nitrite that will dissolve rapidly, as well as store without caking. This new SOLVAY product is now packed in 400-lb. fiber drums as well as 100- and 400-lb. steel drums and 100-lb. bags to meet your individual needs.

Write, or fill in coupon, for prices and the name of your nearest dealer.

Inspection Sample Available—Check Coupon Below

SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

Please send me:
☐ Inspection sample of SOLVAY flake Sodium Nitrite.
☐ Prices and the name of my nearest dealer.

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Position _____
Company _____
Phone _____
Address _____
City _____ Zone _____ State _____

DW-11

SOLVAY®

Sodium Nitrite • Caustic Soda • Calcium Chloride
Chlorine • Caustic Potash • Potassium Carbonate
Sodium Bicarbonate • Chloroform • Vinyl Chloride
Methyl Chloride • Ammonium Chloride • Methylene Chloride • Cleaning Compounds • Hydrogen Peroxide
Ammonium Bicarbonate • Aluminum Chloride • Carbon Tetrachloride • Monochlorobenzene • Para-dichlorobenzene
Ortho-dichlorobenzene • Soda Ash • Snowflake® Crystals

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C.P. Starches...Try 'em for Size

Glass rods dipped into beakers show comparative draining ability and non-congealing qualities of Ten-O-Film, right, and conventional starch, left.

Non-congealing! Free-flowing! Ideal for Warp Sizing!

TEN-O-FILM®

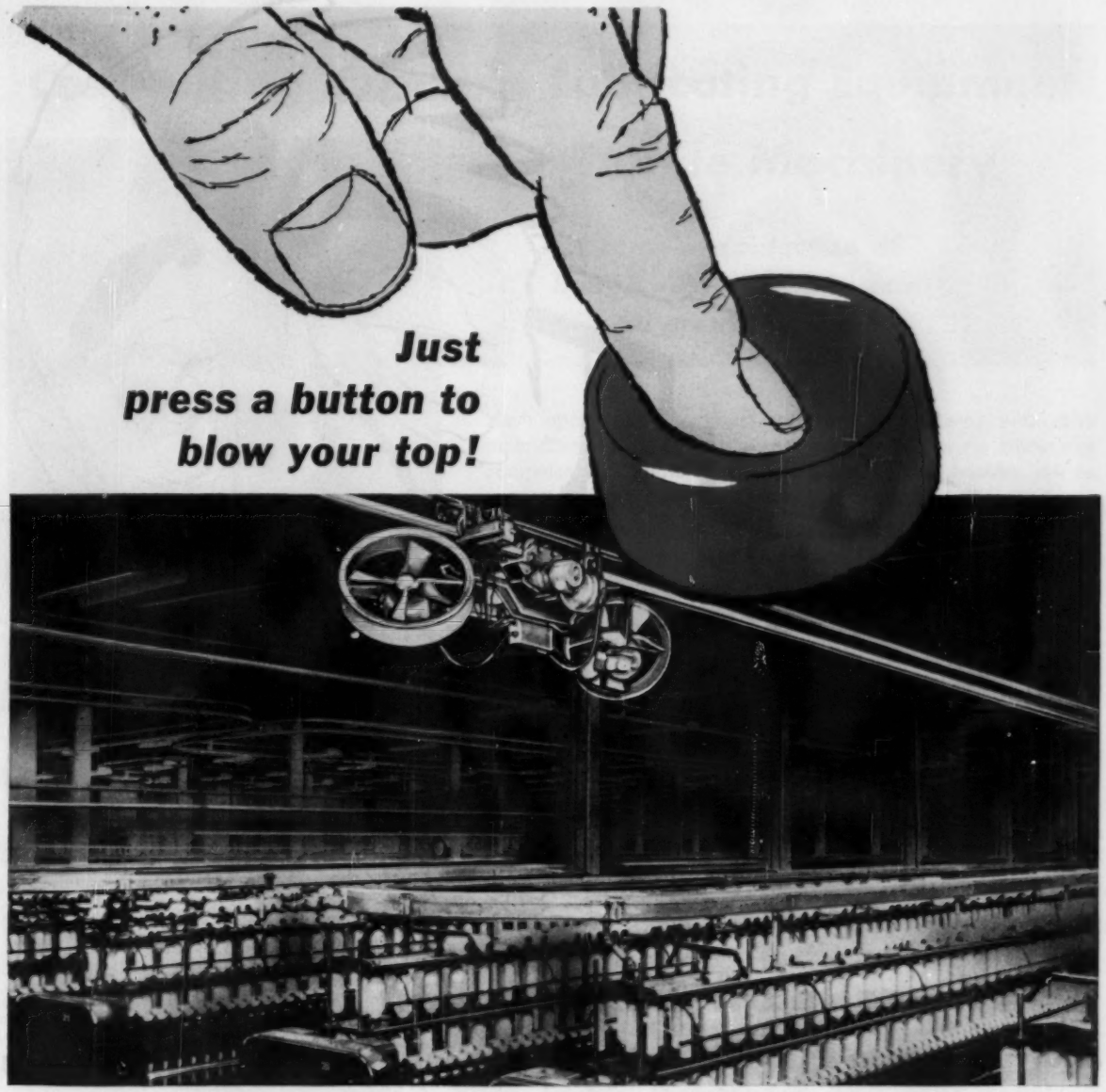
starches

For warp sizing, you'll find TEN-O-FILM Starches a superior product. Ready for use 30 minutes after reaching boil, they remain stable despite prolonged heating and circulating. TEN-O-FILM is unequalled for clarity of film, and fabrics are more readily desized. For detailed information, and technical assistance in adapting TEN-O-FILM to your requirements, contact our nearest sales office, or write to:

CORN PRODUCTS SALES COMPANY
17 Battery Place, New York 4, N. Y.

Corn Products also makes these famous starches for the Textile Industry:

EAGLE® • FOXHEAD® • GLOBE® • HERCULES • GLOBE® Dextrines



Just press a button to blow your top!

Cleanliness and the elimination of lint from the ceilings of your mills is important to you. The accumulation of lint is not only a fire hazard but causes "slubs" or "gout" by falling into the processing machines. Now, you can have *continuous* cleaning without disturbance to production or personnel below with the Louden Automatic Twin-Fan Ceiling Cleaner.

The Louden Twin-Fan Cleaner travels overhead on a Monorail track that "blankets" the room to be kept clean. The twin fans, an exclusive Louden feature, sweep in *opposite directions* on both sides of the track at once, eliminating dead air pockets when traveling under beams, ducts and other ceiling obstructions. This also aids in equal distribution of humidity. The twin fans are independently adjustable, can be pointed in any direction, thus meeting the needs of your room. They may be automatically shut off and turned on as necessary.

With the Louden Automatic Twin-Fan Ceiling Cleaner you can be sure of highest dependability, efficiency and economy, because this is another product of Louden's long experience in designing and building overhead track and overhead equipment of every type. If you have a ceiling cleaning or a materials handling problem, let a Louden engineering representative tell you how Louden can be of help to you. Write or wire today.

THE LOUDEN MACHINERY COMPANY
7111 Court, Fairfield, Iowa
A Subsidiary of Mechanical Handling Systems Inc.

Louden

SINCE 1867 . . . THE FIRST NAME IN MATERIALS HANDLING

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TENSION WEARING YOU DOWN?

SKF Tension Pulleys reduce tape wear...and tape throwing

SKF, leader in the production of anti-friction textile units, offers cost cutting, performance-boosting features that cannot be matched by substitutes. Designed around tilt-proof, double-row SKF ball bearings, this extra-efficient Tension Pulley is low in first cost, low in operating cost, low in maintenance cost.

SKF has met the bearing needs of the Textile Industry for over a quarter of a century. Today, in mills the world over, more SKF anti-friction textile units are in operation than any other make ...proof of superior performance over the years. 7787

SKF®

EVERY TYPE—EVERY USE

Spherical, Cylindrical, Ball, and "Tyson" Tapered Roller Bearings

® Reg. U.S. Pat. Off.

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

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Cost-cutting *Lincoln* Lubricating Equipment for Textile Machinery

... complete selection of heavy duty grease guns ... and grease fittings

High pressure Lincoln Grease Gun being filled from Lincoln Filler Pump.

Slash operating costs, boost mill production, insure productive maintenance in your textile operations with Lincoln lubricating equipment ... choose from a complete line that enables you to keep your textile machinery working at peak efficiency!

Here are just a few of the available Lincoln Heavy Duty Lever Guns ... built to last, with sturdy steel construction and special rust-resistant plating. High pressure and volume models ... large and extra large lubricant capacities ... all models designed for fast, clean refilling (each equipped with a Filler Nipple for fast refilling from a Lincoln Filler Pump). Easy to operate ... engineered for fatigue-free lever action.

Model 1035
20 ozs.

● MASTER HEAVY DUTY LEVER GUNS

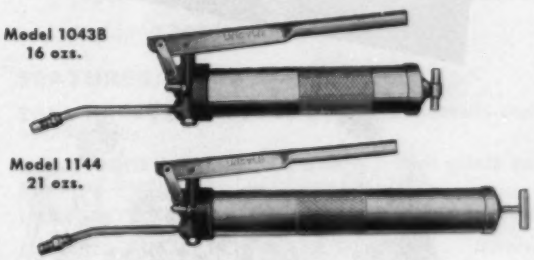
Available in both high pressure and volume models. Extra large lubricant capacity ... 20 ozs. and 32 ozs. Positive, easy priming ... equipped with extra large, powerful Follower Spring. Can be refilled in 30 seconds from a Lincoln Filler Pump, or by suction. Pump all types of pressure gun lubricants in any weather.

Model 1142
16 ozs.

Model 1151
21 ozs.

● SPECIAL HEAVY DUTY LEVER GUNS

Deliver all pressure gun lubricants in any weather. Spring primed, and may also be Force Primed. Large lubricant capacity ... available in High Pressure Models, 16 ozs. and 21 ozs. Can be refilled in 30 seconds from a Lincoln Filler Pump, or by suction.



Model 1043B
16 ozs.

Model 1144
21 ozs.

● SUPER HEAVY DUTY LEVER GUNS

Large lubricant capacity ... available in high pressure models, 16 ozs. and 21 ozs. ... in volume models, 16 ozs. Spring or force primed. Can be refilled in 30 seconds from a Lincoln Filler Pump, or by suction.

● GREASE FITTINGS

All types and thread sizes ... Hydraulic Ball-In-Head — standard and special fitting designs.

Remember, look to Lincoln for the most complete line on the market ... from grease fittings and grease guns to completely automatic centralized lubrication systems!

Sales and Service facilities are available through a coast-to-coast network of leading industrial distributors!

Simplify specification and purchasing ... write today for new Lincoln Catalogs: Nos. 64, 80-1, 811, 806-R, and 41.

Lincoln

LINCOLN ENGINEERING COMPANY
Division of The McNeil Machine & Engineering Co.
5742 Natural Bridge Avenue • St. Louis 20, Missouri

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VICTOR FINISHING STARCHES

FOR PURE FINISH

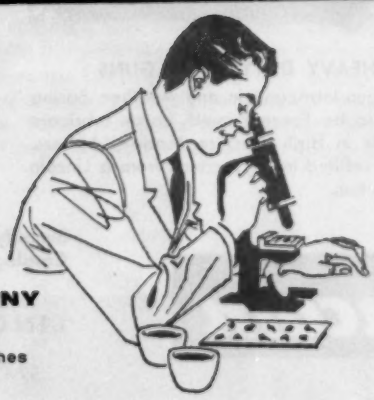
Victor P-40-U

SMOOTHER HAND
BRIGHTER SHADES AND WHITES

FOR BACKFILL

Victor 10-55

MORE MELLOW HAND
ALWAYS UNIFORM • CARRIES MORE TALC



Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1500 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH COMPANY
GENERAL OFFICES-COLUMBUS, OHIO

Processors of corn, wheat and blended starches for industry since 1898

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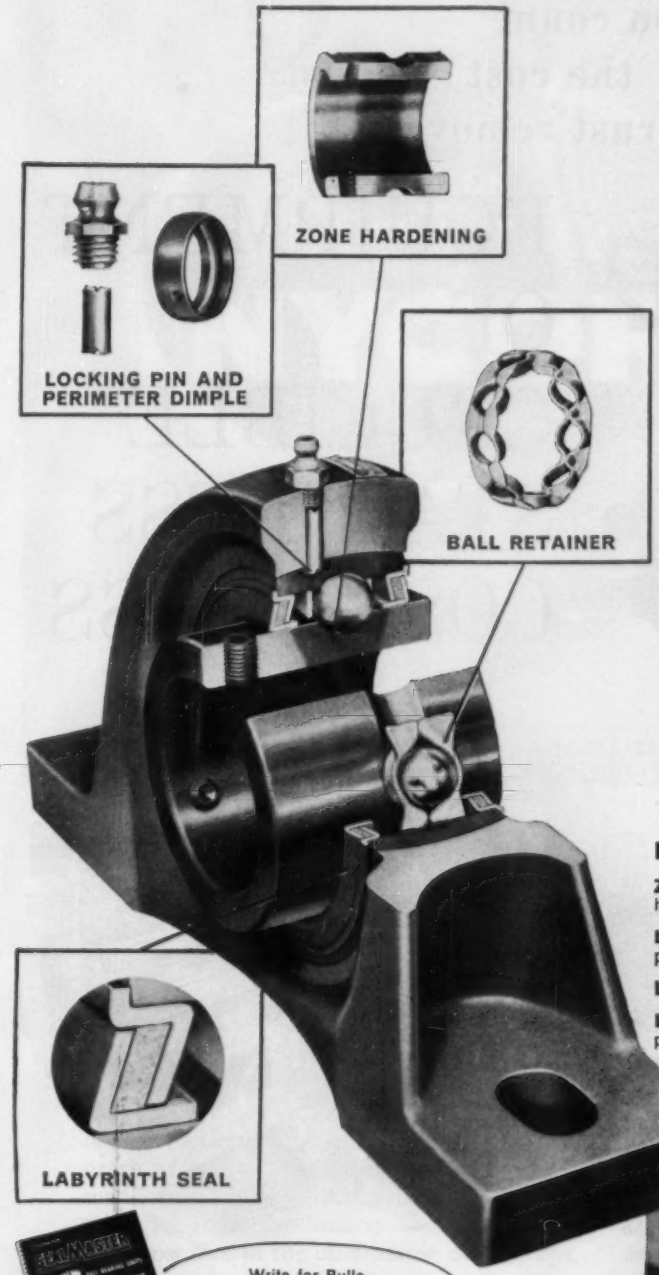


THIS EXCLUSIVE COMBINATION OF FEATURES IS YOURS WITH SEALMASTER BALL BEARING UNITS ... PLUS QUICK, EASY MOUNTING!

Slip a SEALMASTER Ball Bearing Unit into place on the shaft—tighten two set screws and you have the answer to ease of mounting in a bearing unit. SEALMASTER'S exclusive combination of features take over from there, providing smooth, trouble-free performance and long bearing life.

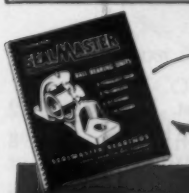
FEATURES:

ZONE HARDENING . . . assures positive race-to-shaft holding power.

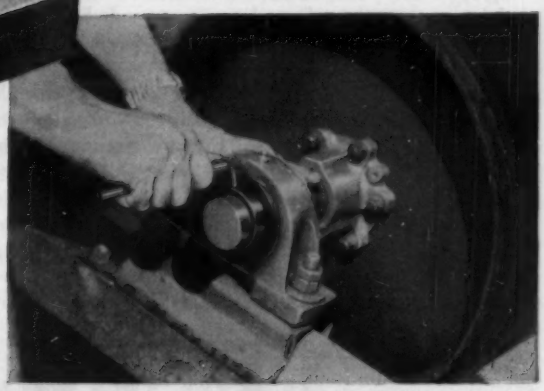
LAND RIDDEN BALL RETAINER . . . traps grease and prevents "churning."

LABYRINTH SEAL . . . keeps dust and dirt out, lubricant in.

LOCKING PIN & PERIMETER DIMPLE . . . assures positive lubrication.



Write for Bulletin 454 for full information.



SEALMASTER® BALL BEARING UNITS

SEALMASTER BEARINGS A DIVISION OF STEPHENS-ADAMSON MFG. CO. 10 RIDGEWAY AVENUE, AURORA, ILL.

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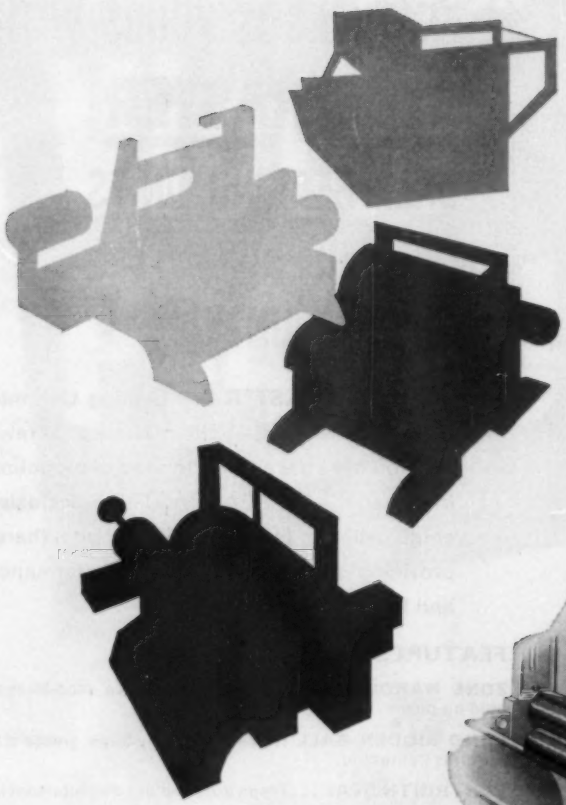
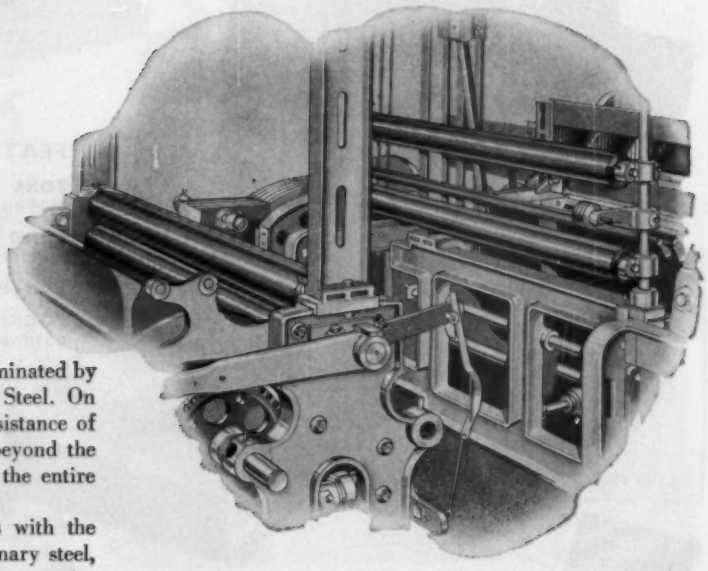
when you count the cost of rust removal

EQUIPMENT OF CRUCIBLE STAINLESS COSTS LESS





The cost of removing rust can frequently be eliminated by using equipment made of Crucible Stainless Steel. On whip rolls, for example, the high corrosion resistance of stainless prevents rust from forming on ends beyond the warp's contact area. When the loom is down, the entire stainless steel roll stays rust-free.

Compare effective rust prevention like this with the cost of continual cleaning to keep rust off ordinary steel, and the long term economy of Crucible Stainless equipment is apparent.

Corrosion resistance is just one of many properties which make Crucible Stainless, in the long run, the most economical material for a great variety of textile equipment. It will pay you to find out more about how the use of this cost-cutting material can make equipment turn out better quality yarn at lower cost. Do either of 2 things: (1) Write for Crucible's 32-page booklet, "Making the Most of Stainless Steels in the Textile Industry", or (2) get in touch with your local Crucible representative. *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor — Railway & Power Engineering Corp., Ltd.

"NYCOR" the New Revolutionary Stretch-less Belting For the Textile Industry.

This new G & K American made belting is what many superintendents and overseers have been looking for because it possesses lasting recoverable elasticity. It has the tight grasp of leather and the strength of plastic made stretchless in processing. "NYCOR" will give more production — less maintenance cost due to the elimination of take-ups.

"NYCOR" can be used on Slubbers, Intermediates, Traverse and Lickerin drives and it also has many other applications. The High Tensile Strength of "NYCOR" and its great coefficient of friction, allows the use of narrower belts that mean greater speed variations and more precise speed control.

Its oil resistant construction will give longer belt life in that it is uneffected by machine oils and humidity changes.

Remember that G & K "NYCOR" Belting has been developed to meet the exacting requirements of textile machinery. It is a high quality product of Graton & Knight, the world's largest industrial leather manufacturer known for its dependable products and service.

Send for more information on this amazing new revolutionary belt.

GRATON AND KNIGHT®

GRATON & KNIGHT *Company* INC.

WORCESTER 4, MASSACHUSETTS

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Rubber rolls like this in your plant, mean lost money and production. Read how regular roll maintenance procedures can help to eliminate this problem.

how to save money and improve production with proper roll maintenance

Cast a critical eye about your wet finishing operations and look in particular at the rubber covered rolls. If you see cracked ends, loose covers, checking or flat spots, chances are you are losing money, time, and perhaps even some of the goods which you run. Those rolls with cracked ends could have been saved had they been ground when the condition first showed itself. The loose coverings could have been prevented by covering the roll ends to seal out the water and chemicals which break down the bond. The covers which are checking should be ground right now before the checks deepen into irrepairable cracks, and the flat spots should be ground out before they ruin the roll. All should be corrected before they cause shaded goods.

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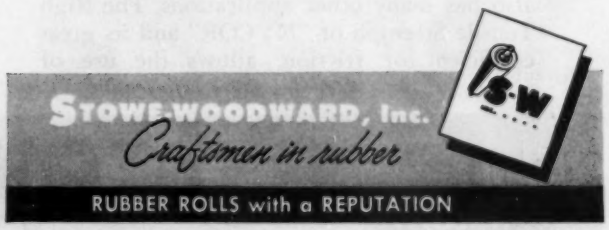

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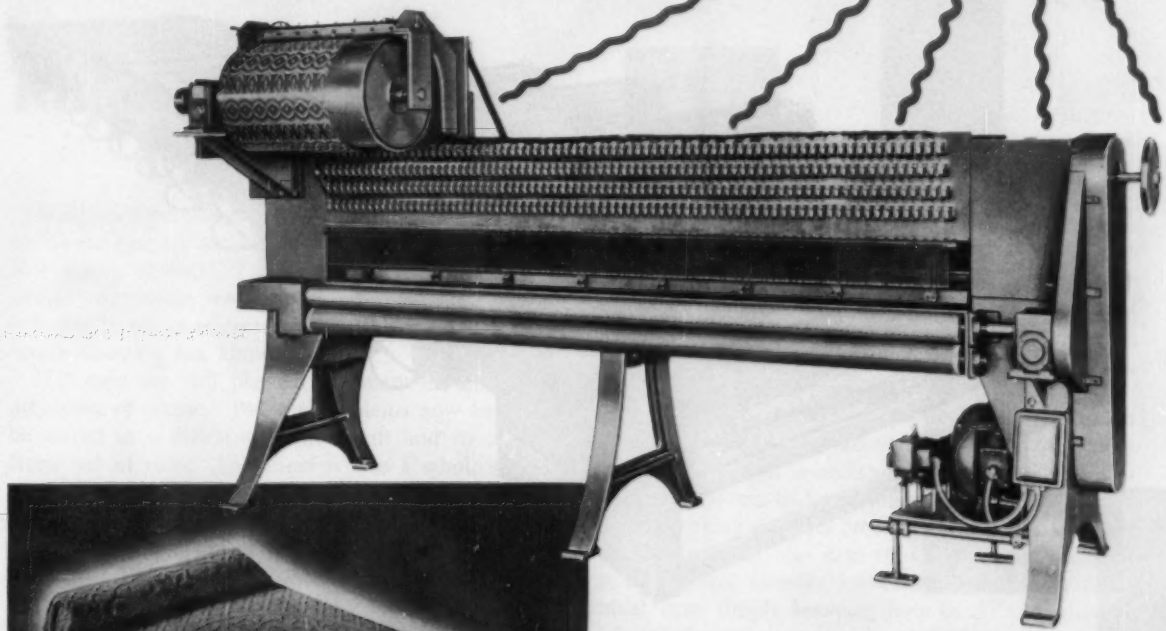

New Cobble Machinery Introduces New Styling

Cobble Brothers, the largest and oldest manufacturer of Yardage Tufting Machines, is working constantly on improvements in machinery in an effort to introduce new ideas and new styling in the tufted textile field. An example of this is shown above in the new Controlled - Needle Yardage Tufting Machine.

This latest in the Cobble Line of Tufting Machines enables the operator to dispense with expensive overlaying operations. As a result patterned spreads of unusual beauty and quality can be produced at costs far below any other method. The machine will produce any type pattern with unlimited scope. Any desired symetrical pattern can be produced, with or without repeats, thus giving designers opportunity to create their most artistic designs. The Controlled-Needle Yardage Tufting Machine is built in 115-inch width and 3/8-inch gauge. Production is 125 units per eight hours.

Write, Wire or Phone for Information on Cobble Bros. Complete Line of Tufting Machinery

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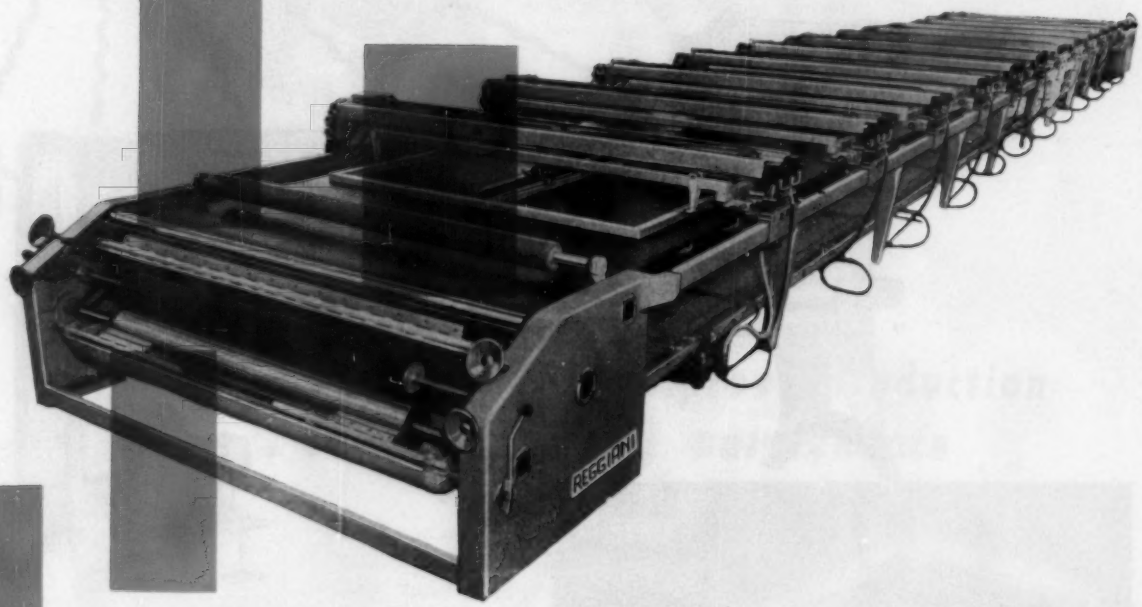

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Know How—and Know Why

Most well-informed men in the textile industry are aware that we are in what well might be called a new age in textiles. Factors are at work now that make the present and almost certainly the future different in many respects from any other period the textile industry has known.

Mill men are still plagued by many of the same problems, of course. But the problems now have to be solved in a different environment and by a different set of rules. And there is also a whole series of new problems.

For example, the few short years since the post-Korea market glut was dissipated is one of the longest periods of the twentieth century unaffected by war, depression, or war-or-depression correction. Therefore, in spite of the tremendous wails that go up every two years when the textile-business cycle goes down, production in the last few years has been remarkably level.

Also, higher and higher wages, overtime pay, and more stable fiber prices have forced a completely new management outlook. And the availability of many new fibers with a range of excellent but different properties, tremendous strides in chemical treatments, and drastic changes in income distribution and habits of living have forced new outlooks and techniques in both production and sales.

Broader Knowledge a Necessity

These sweeping changes are year by year requiring more and more of the men who move ahead of the throng.

For many years it has been evident that supervisors, for example, have to become primarily managers of people. In late years, some mill organizations have been putting premiums on business and administrative training. And advances in quality-control techniques have created a whole class of technicians that did not exist several years ago.

These examples point out one thing: to get ahead or stay ahead now in textile business requires a great deal more alertness, a great deal more knowledge, and a much broader outlook than ever before.

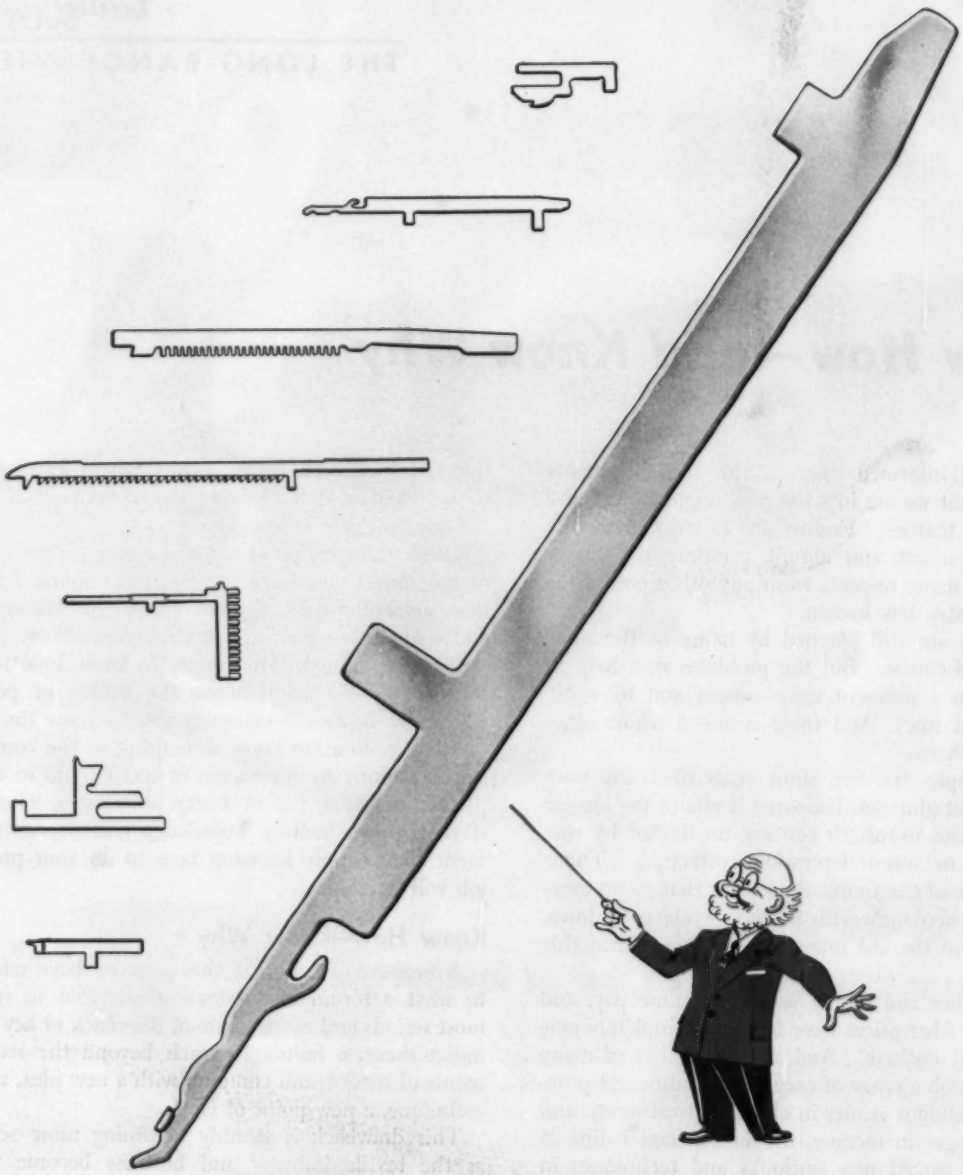
It is not enough now simply to know how to do something. To stand above the throng of people who know how, it is necessary also to know the why of what is done, to know something of the complex forces working in other areas of textiles and in other places. In short, the next step above you, whatever it is, requires broader knowledge and keener judgment than simply knowing how to do your present job will develop.

Know How—Know Why

A number of times on this page we have referred to what a forum of superintendents told us is the most serious and most common drawback of key men under them: a failure to reach beyond the requirements of the job and come up with a new idea, a new technique, a new point of view.

This drawback is steadily becoming more serious as the textile industry and business become more complex. And many men now in key positions are blocking themselves from advancement simply by resting on their present knowledge of how to do the present job. Advancement more and more will go to the man who not only knows how to do a job but who also knows the why behind the job.

O. M. Thomas



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Textile World

Volume 107, No. 11. November, 1957

Workers Answer the Question: What Makes a GOOD SUPERVISOR?

• The qualities needed for successful supervision have been listed and defined by many so-called experts. Here's a list of desirable qualities made by some of those most vitally interested—the people who are supervised.

THE PLANT PAPER OF A LARGE BLEACHERY asked a number of employees, "What makes a good supervisor?" The answers listed the usual desirable qualities, but the order of their importance may come as a surprise to some personnel-relations experts.

The qualities are not necessarily listed in the same order as given by the employees. The number-one quality is the one mentioned most often, number two is the quality mentioned by the next largest number of employees, and so on down the list.

The employees said they would like for their supervisors to have these qualities:

1. Know the job. The supervisor should be well-versed in all phases of the work under his direction. Many of the other qualities mentioned are dependent on a knowledge of the job. For instance, a supervisor cannot be impartial, progressive, adaptable, and command the respect of the employees under his direction unless he has a good understanding of the work.

2. Impartiality. In being impartial, the supervisor should be firm but fair with all his subordinates. He should not show favoritism on the job. Neither should he carry a grudge or use his position to discipline anyone for purely personal reasons.

The supervisor should make promotions and demotions solely on merit. He should subordinate his personal likes and dislikes to what is best for the job as a whole. In his outside activities, he should be free to pick and choose his friends and associates but should not let such friendship influence his on-the-job decisions.

3. A good mixer. A person who gets along well with others can gain their respect and cooperation. The supervisor who is a good mixer works well with other departments. By his contacts with others he keeps abreast of current developments.

Employees are more willing to confide in a supervisor who is a good mixer. He has a better chance of learning of grievances before they become serious. And he can usually settle grievances better than the supervisor who is not a good mixer.

4. A leader. The supervisor should be a leader, not a driver. He should say, "Let's do it," and "We did it," not, "You do it," and "I did it."

A good leader not only sets the pace for the workers but also sets an example. He plans work far enough in advance to avert crises, and he tells all employees concerned of any pending changes.

5. Personality. A good personality is composed of many things. A supervisor must have a good personality to be a good mixer. Personality traits desirable in supervisory positions include all the virtues necessary for success in any endeavor. In fact, a supervisor's personality is built upon all the other qualities that he possesses.

6. Honesty. As defined in this respect, honesty is not merely a matter of refraining from lying, stealing, and cheating. The supervisor should be honest with himself, his superiors, and his subordinates. Being honest, he faces each decision squarely and takes the action that he believes best for all the people concerned.

7. Respect. A successful supervisor must have the respect of his employees, and he must also respect them. Mutual respect can be gained only through mutual understanding. A supervisor who is weak, inconsistent, or overbearing cannot retain the respect of his employees.

This respect must be earned and jealously guarded. A wrong word or action can quickly destroy one person's respect for another, and the supervisor lives in a glass house where everyone is quick to see and criticize his every effort.

7. Understanding. A supervisor must understand his people. He must be able to talk their language. If he does not understand their thoughts, words, and actions, he will be unable to cope with their problems.

On the other hand, the supervisor should make certain that the employees understand him. He should take nothing for granted but should make all his orders clear. When he makes changes, he should discuss the matter with everyone so that there will be a mutual understanding of all elements involved.

9. Sincerity. A valuable supervisory quality is that of being sincere. Hypocrisy has no place in supervision. The supervisor who is not sincere quickly loses the respect of his employees and the trust of his top management men.

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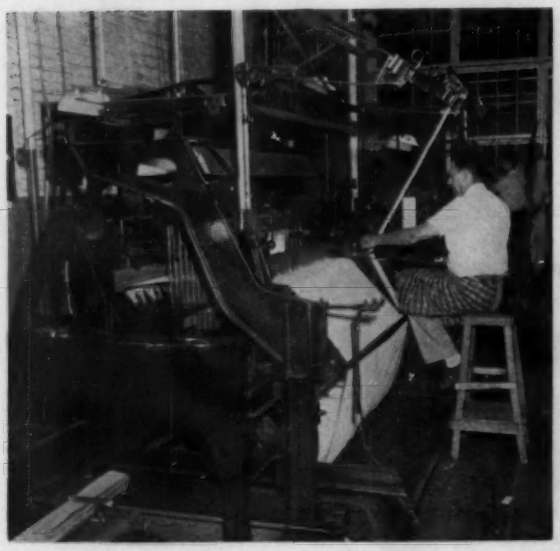
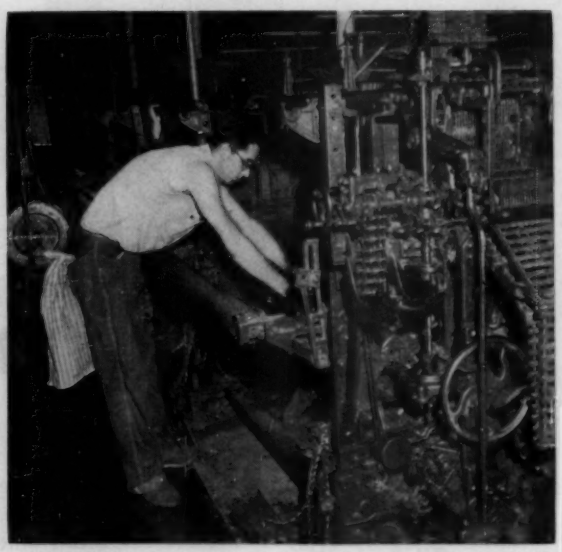


DRAWING-IN MACHINES are used to draw most warp patterns for the 1,136 looms.



LOOMFIXER checks each loom thoroughly when a warp is out and makes a report.

How COMBED-COTTON FABRICS Are Woven at Highland Park

Highland Park Mfg. Co., Inc., Charlotte, N. C., produces ½-million yds. of shirting, dress goods, and sport fabrics per week. The mill—

- **Draws almost all its patterns**
- **Runs 400 samples a year**
- **Cleans looms by vacuum**

A HALF-MILLION YARDS of combed-cotton fabrics are woven each week at the No. 3 Mill of Highland Park Mfg. Co., Charlotte, N. C. The cloth includes fancy shirting and dress goods and also material for shorts, bathing suits, and raincoats.

The mill has 400 different fabric styles in 40 different constructions. To get the desired effects, 146 colors and 80 different filling yarns are used. Most of the yarn, both warp and filling, is dyed. Stock, yarn, and beam dyeing are done at the mill. Yarn is 17s to 40s fine combed cotton.

The mill weaves an average of 400 new samples annually. Production of samples is accepted as a part of the regular routine, and several looms are used exclusively for this purpose.

Highland Park has a total of 1,136 looms; 346 are Draper 50-in. XDs, and the others are C&K 40- and 48-in. looms. All the looms have dobbies, and some use two warps.

Weaving Jobloads Vary

The Draper looms operate at 172 ppm., and the C&K looms have a speed of 148 and 156 ppm. Jobloads vary on the box looms; weavers tend 22 to 30 looms, and loomfixers have from 40 to 50 looms per section. A weaver tends 26 XD looms, and there are 60 looms per section.

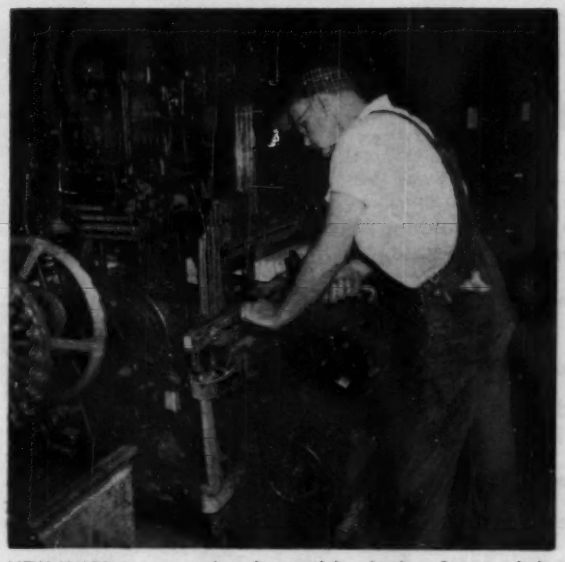
The looms all have electric warp stop motions and low-roll silk-type take-up motions. The Draper looms have 24-in. warp-beam heads, and the C&K looms have 22-in. beam heads. All the looms use 8-in. quills.

The loomfixer does all repair and maintenance work on his section with the exception of heavy overhauling. An overhauling crew goes over each of the looms at least once a year. This crew also helps the loomfixers with major breakdowns such as crankshafts, camshafts, loomsides, and major gears.

Each warp runs three to four weeks, and the loomfixer checks each loom thoroughly at a warp-out. A tag on each new warp has a checklist on the back and a space for the loomfixer's signature. When each item has been checked off and needed repairs or adjustments are made, the loomfixer signs the tag. The second hand makes spot checks to see that all necessary work is done.

Defects Are Quickly Located

In addition to seeing that the loom is in good mechanical condition, the loomfixer must also see that it is started correctly. He checks the pat-



NEW WARP is inspected and started by the loomfixer, and the second hand makes a follow-up check.

COLORED FILLING is used to weave the fancy shirting and dress fabrics.

tern, draw, and filling to see that they are as ordered. Then he starts the loom and makes certain it is weaving correctly before he leaves it.

When defects are found in a cut of cloth in the cloth room, a report is sent immediately to the overseer of weaving. The second hand passes the report to the loomfixer and follows up to see that the loom is fixed. The report lists the loom number, yards of cloth affected, and the type of defect. Immediate and close follow-up of the reports keeps off-quality cloth to a minimum.

A unique feature of this mill is that there are no compressed-air outlets or hose in the weave room. General loom cleaning is done by vacuum. Two self-contained vacuum units powered by electric motors are used in the weave room. Each loom is cleaned every four days. The looms are thoroughly cleaned at warp-outs. As soon as the exhausted warp is removed, every part of the loom is cleaned with brushes, mops, and rags.

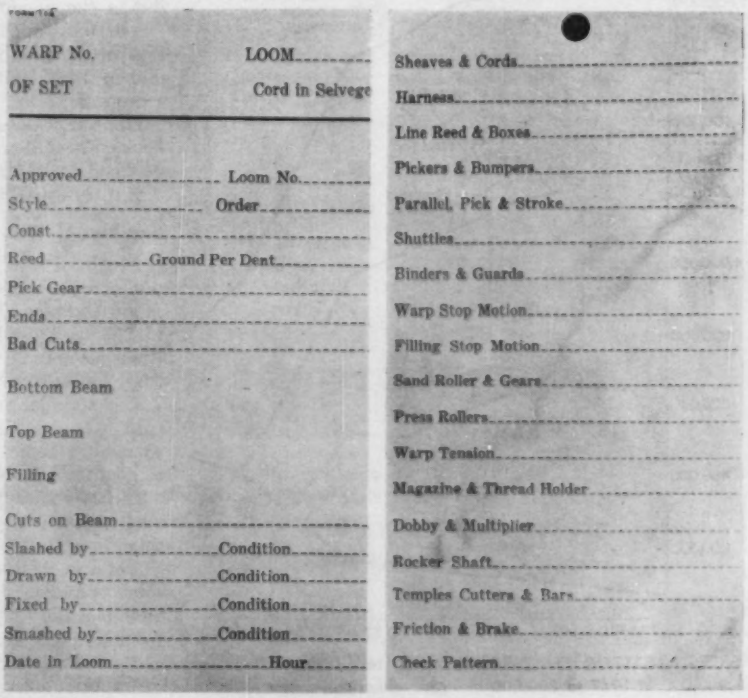
Few Patterns Can Be Retied

Because of the wide diversification of fabrics, few of the patterns can be tied to new warps. About 90 to 95% of the warps are drawn, either by hand or by machine. The mill employs 10 drawing-in hands. There are three Barber-Colman drawing-in machines for Draw-Tex harnesses and one drawing machine for plain-gingham twine harnesses.

Filling for all the looms is quilled on a Schlafhorst Autocopser winder. About 80% of the filling is dyed.

Highland Park's No. 3 Mill has central-station air-changing systems and atomizer humidifiers. Temperature is maintained at 85° F. Relative humidity is 84%.

Since a fancy-goods mill requires a high degree of skill on jobs such as weaving and loomfixing, Highland Park has a training program for its employees. Three learner weavers and three learner loomfixers are kept on the payroll. The learner fixers work with the overhaulers except when a regular loomfixer is absent. Then the learner gets first-hand experience on the section.



WARP TAGS have fabric data on the front and a mechanical checklist on the back.

Revolution in WORSTED SPINNING

Textile men are a little gun-shy of the word revolution—but that's the most accurate way to describe what's been going on in worsted spinning.

- U. S. consumption of woolen and worsted yarns (excluding carpet yarns) shrank 30% from 1947 to 1954.
- Worsted spindles shrank 57% from 1949 to 1956.
- The new American system gained rapidly and now has more spindles in place than the older Bradford and French systems combined.

What caused such sweeping changes in such a short time?

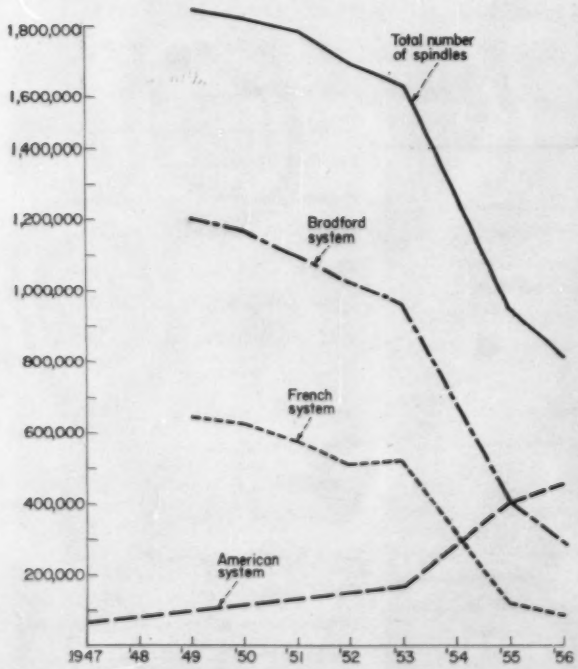
What changes have occurred in the individual spinning systems?

Will all the systems live, or will economic factors force mortality?

This article explores these and other questions and points out important trends that show that the revolution is still continuing.

By **VICTOR SAXL**, Vice President, Stellamcor, Inc.

What Has Happened to Woolen and Worsted Spinning



WORSTED-SYSTEM SPINDLES in place fell from a high of 1,900,000 in 1947 to 800,000 in 1956. American-system spindles gained at the expense of the French and Bradford systems.

The worsted system of spinning has undergone more drastic changes in the U. S. since World War II than it did in the previous half century.

The most apparent change has been an alarming reduction in the number of spindles. From more than 1,800,000 in 1949, spindles shrank to about 800,000 in 1956, a drop of 57%.

Consumption of worsted yarns also dropped drastically. From 596-million lbs. in 1947, production plus imports declined to 418-million lbs. in 1954, a drop of 30%.

But, as usual, statistics don't tell the whole story.

Equipment Was Obsolete

Much of the equipment listed in the statistics was out of date. It could not be operated economically.

For instance, 78% of all spindles in the French system in 1947 consisted of out-of-date mules. Production from the mule spindle is about 40% lower than the production from the modern ring spinning spindle.

Cap spindles amounted to 61% of all Bradford spindles. Cap spindles cannot be operated economically today except for some fine worsted yarns or special fibers such as goat hair, mohair, and alpaca.

Cap spindles produce a bobbin of only 1½ to 3 oz., whereas new large-package frames spin bobbins that contain three to five times that much yarn.

Because of today's high wages, spinners are assigned more spindles. The fact that the production per spindle would drop slightly is disregarded; so it is difficult to determine exactly how much higher the production per spindle is today than before World War II.

Imports are given as the most important influence toward the contraction of the worsted system of spinning.

Although imports have hurt some sections badly, imports are only partly to blame.

Import statistics don't give separate figures to segregate woolen and worsted yarns or products. However, both woolen and worsted mills have been equally hard hit; so the import figures can be taken as a good basis for study.

The 1947 figures show that the domestic production of woolen and worsted yarns, except carpet yarns, was almost 592-million lbs. Imported yarns and goods except carpets amounted to about 4-million lbs.

In 1954, domestic production was about 404-million lbs. and imports were about 14-million lbs.

Although imports increased to 26-million lbs. in 1956, the total import figure is only slightly more than 6% of the domestic production of 1954. Total production of woolens and worsted has, however, slipped 178-million lbs. between 1947 and 1954.

Fashion Has Changed Worsteds

Fashion changes have wrought havoc with worsteds. Many types of clothing previously made of yarns spun on the worsted system are now made of cotton, rayon, acetate, and man-made fibers spun on the cotton system. Even wool is now spun in blends on the cotton system.

Dress habits have changed. More casual clothes are worn the year around. Sports and leisure clothes made of yarns spun on systems other than the worsted system have increased in importance. Wash-and-wear fabrics are growing in popularity.

Fabrics are becoming lighter in weight.

Fabrics are more durable because of fabrics and blends made from nylon, Dacron, Orlon, and Acrilan. Worsted yarns for knitting are being replaced by filament yarns such as Helanca, Ban-Lon, Taslan, and Saaba.

Some fabrics, such as interlinings, are being replaced with nonwoven fabrics.

How Individual Systems Fared

These, then, are the chief reasons for the decline in the number of worsted spindles. Let's see how this decline has affected the individual systems.

A few years ago, the Bradford and French systems were the only systems for worsted spinning in this country. The postwar decline in French spindles started about 1950, and the decline has accelerated since 1952. The trend in the reduction of Bradford spindles was similar but less drastic.

Today there are only about 12 mills in the U.S. using the French system. These mills are located chiefly in New England. Two mills are in the South, and one is in New Jersey.

The present number of French spindles is estimated between 80,000 and 100,000, a big drop from the 650,000 spindles in place in 1947.

These spindles are probably not all in operation and only one or two spinners use the system in its purest form. Other spinners have modified the system to suit their needs.

Bradford System Lost Heavily

In 1947, the Bradford system was represented with 1,278,000 spindles. A new system of identification was introduced in 1953, which did not give the exact figures for the Bradford system; so we can only estimate the Bradford spindles in place today.

Statistics for 1956 indicate a total of 809,000 worsted spindles in place. There are 156,000 cap spindles, 628,000 ring spindles, 14,400 mule spindles, and 10,000 flyer spindles.

The cap and flyer spindles belong to the Bradford system; the mule spindles belong to the French system; and

Imports of Wool Yarn and Materials

	Yarns	Fabrics
	(lbs.)	(lbs.)
1947	390,000	2,503,000
1954	1,642,000	9,306,000
1955	2,032,000	14,344,000
1956	2,385,000	17,345,000
	Knit Goods	**Other wearing apparel**
	(lbs.)	(lbs.)
1947	849,000	327,000
1954	2,555,000	635,000
1955	3,190,000	833,000
1956	5,078,000	1,554,000

IMPORTS of wool yarn and materials have risen steadily since 1947, but imports are not the prime reason for the reduction in spindles. The total import figure is only about 6% of domestic production.

Yarns Spun on the Woolen and Worsted Systems (Except carpet yarns)

Classification	1947	1954	Change
	(1,000 lbs.)	(1,000 lbs.)	(%)
Weaving	504,597	339,209	− 33
Woolen system	310,240	238,650	− 23
Worsted system	194,357	100,559	− 48
Bradford	141,005	59,757	− 58
French	53,352	16,356	− 69
Other	n.a.	24,446	(a)
Knitting, machine	76,260	56,408	− 26
Woolen system	27,846	11,698	− 58
Worsted system	48,414	44,710	− 8
Bradford	38,514	20,680	− 46
French	9,900	5,775	− 42
Other	n.a.	18,255	(a)
Knitting, hand	11,080	6,658	− 40
Woolen system	103	305	+196
Worsted system	10,977	6,353	− 42
Bradford	9,701	4,233	− 56
French	1,276	.....	(a)
Other	n.a.	2,120	(a)
All other, woolen systems	.....	1,974	(a)
Grand total	591,937	404,249	− 32
Woolen system	338,189	252,627	− 25
Worsted system	253,748	151,622	− 40

(a) Cannot be computed (n.a.) Not available

DOMESTIC PRODUCTION of worsted and woolen yarns showed a drop from 591,937,000 lbs. in 1947 to 404,249,000 lbs. in 1954. Worsted-system yarns have suffered more than woolen-system yarns.

the ring spindles are divided between the French, Bradford, and American systems. There are about 280,000 Bradford spindles in place today, or about 25% of the 1947 figure.

During the last 10 years we have seen the rise of the American spinning system. This system was first listed in 1951 under other systems with 118,000 spindles. Today, there are about 450,000 American-system spinning spindles in place.

This increase does not mean that the American system will completely replace the other systems, although equally good or even better yarns can be manufactured when good, suitable tops are used. Modern top makers now have excellent machines to produce these tops.

All Systems Have Their Place

The other systems have their valid place. For instance, the Bradford system is used to great advantage with long, coarse, and special fibers.

The French system is important in making lofty and fine yarns with weak and short wools of irregular staple. This system is important in Europe and South America, where labor costs are low and the raw material price is the most important cost factor.

The Bradford System

Ten years ago, the radford spinning system was the most important system in the U. S. for spinning worsted yarns. The first worsted spinning in this country, the Bradford system was originally suitable for processing long wools.

Since then, the system has been perfected and is now used also for medium-long and shorter wools with an average staple of not under 3 ins. Long wools up to 15 ins. can easily be processed.

Although the types of machines for different categories of wool do not differ much, there are a number of features that vary for the processing of fine wools, medium wools, and long wools. A set suitable for one group may not be suitable for another group.

Twist Controls Fibers

The Bradford system uses oil-combed tops with about 3.25% oil content. The fibers are controlled by twist, and the twist is harder than the twist in American-system yarns.

The prewar setup consisted of five to nine operations depending on the stock quality and the yarn numbers to be spun. Two intersecting gillings were followed by two or three drawing operations and completed by one or two finishing drawing operations on the reducer and/or rover.

The Bradford drawing set could consist of either open or cone drawing. Ring rovers and/or ring reducers could be used in the final operation.

In open drawing, the bobbin is loose on the spindle and is dragged around by the slubbing. In cone drawing, the bobbin is positively driven and the tension on the slubbing is negligible.

Open Drawing Is Faster

The speed of the open drawing is much greater, but the cone drawing produces larger bobbins and a more-even roving. Less doffing and fewer piece-ups are necessary.

Flyer, cap, or ring spinning frames are used. Flyer frames are used to advantage only on coarse yarns, such as hand knitting yarns and lustrous yarns such as mohair or alpaca that can be processed at low spindle speeds.

Cap spinning is still used for certain fine yarns and materials that cannot be spun successfully on ring spinning frames. These materials include goat hair, camel's hair, mohair, alpaca, and certain cross-bred wools.

Ring spinning frames have become the most important spinning machines. Drafts of seven and higher are used, and the drafting systems have been changed to insure good yarn evenness.

Bradford Spinning
(1/24s knitting yarn—125 lbs. per hr.)

Operation	Operators	Machine	Operators	Machine
1		Pin drafter or gill reducer	1	Gill reducer with Autoleveler
2	1	Pin drafter or gill reducer		gill reducer
3		Pin drafter or gill reducer	A	Rover
4	A	Rover	B	Spinning frame
5	B	Spinning frame		

A—not a full workload
B—one spinner for 600 spindles, one doffer for 1,200 spindles

PRODUCTION per manhour in drawing is about 65 lbs. One fixer and oiler look after the set, which includes spinning frames.

New Machines Were Introduced

The first important change in the Bradford spinning system occurred with the introduction of the high-speed gills such as the pin drafter, gill reducer, and super intersector. These machines have higher speeds and higher drafts, and they deliver even sliver into large cans.

Five operations of the postwar drawing setup were replaced by three high-speed intersecting gilling operations. The number of operators was reduced and waste was cut.

Some mills found difficulty in processing oil-combed tops on high-speed gills and spinning frames. A reduction in oil content to about 2% was required. There are some mills, however, that still use the normal oil-combed tops with 3.25% oil content without too much difficulty.

Bradford drawing had to be modified because the sliver from high-speed gills has no twist. The first twist is inserted on the reducer. Cone reducers were used for this step because they converted the untwisted sliver into a twisted slubbing very well.

Cone Reducers Were Changed

Another change took place on the cone reducer. One doubling is now generally used. The draft was reduced to below five. The drafting element was slightly modified because the reducer was originally built to draft twisted slubbing and now there is no twist control in these operations. Cone rovers and ring rovers are used in the final drawing step.

The introduction of the Raper Autoleveller was an important step forward. This sensitive device measures the sliver thickness and automatically and continually varies the draft of the gills to correct variations in sliver thickness.

A new system recommended by British machinery builders consists of four machines. The high-speed intersecting gill box and the draw box, which are the first and second operations, are equipped with Autolevellers.

In the U. S., the shortened setup also consists of four operations; but the second operation consists of a high-speed intersecting gill without Autolevellers.

Roving Frames Have High Drafts

New roving frames are being introduced to the Bradford system. These frames with a new high-draft system permit drafts up to 18, but the fiber length of tops to be used on such frames is limited.

The yarn produced with the Bradford spinning system is smooth and not so hairy or fuzzy as the yarn produced on the French system or on the American system. Because of the oil content, the yarn contains and produces less static electricity.

The Bradford system can be operated under less-rigid working conditions than the French or American systems.

The Ambler spinning system created great interest among U. S. spinners a few years ago. Although tests were made with this system with drafts up to 100, U.S. mills did not adopt this system, probably because it can be operated successfully only under well-controlled conditions. The system, however, has been accepted in some Canadian mills and in Europe.

The French System

Before the war, the French system was known as the porcupine system because six to eight drawing operations were made on porcupine drawing frames. The porcupine permits only low drafts up to 4.5.

Only a slow reduction of sliver weight could be obtained, and 8 to 11 operations were needed. The first two or three operations were made on intersecting gill boxes, which were followed by processing on porcupine drawing frames.

How the System Changed

Drawing operations were reduced by these machines and methods:

The number of intersecting gilling operations was increased with the introduction of a new fine intersecting gill box with rub aprons. This machine is obsolete today and is being eliminated from the drawing process.

A change was then made from normal intersecting gill boxes to high-speed intersectors such as pin drafters, gill reducers, and other high-speed gills, which permitted the production of an even sliver in fewer intersecting operations and an increase in the production per manhour.

The Autoleveller was an additional improvement of the gilling operations because the Autoleveller reduces long-term variations and reduces the number of intersecting gilling operations from three to two.

The open gill box was a great improvement. The control of the fibers by the porcupines in the heavy passages was not satisfactory. The control of short fibers was lost because of the longer distance between the porcupine roll and the front draft rollers. Some fibers slipped above the porcupine rolls.

Because the sliver in the fourth or fifth operation is usually below 50 grains per yard, a single faller field was found advisable to use instead of a double one. When the sliver gets finer, a faller with double pinning is used.

Higher Drafts Are Used

Much higher drafts can be used on open gills than on porcupine frames, and higher speeds are possible. The distance between the last faller and the nip of the front roller can be set as close as ¾ in. so that both short and long fibers get a good control.

The high-draft porcupine frame with an apron permits the increase in drafts up to 5½.

French Spinning
(1/24s knitting yarn—130 lbs. per hr.)

Operation	Machine	Operators	Machine	Operators
1	Pin drafter or gill reducer		Gill reducer with Autoleveller	1
2	Pin drafter or gill reducer	1	Gill reducer	
3	Pin drafter or gill reducer		Open gill box	
4	Open gill box		Porcupine fore finisher	2
5	Porcupine fore finisher	2	Finisher	
6	Finisher			
7	Spinning frame	A	Spinning frame	A

A—one spinner for 600 spindles, one doffer for 1,200 spindles

FRENCH-SYSTEM SPINNING has seven operations, which can be cut to six with an Autoleveller. Drawing production is about 43 lbs. per manhour.

In spite of these improvements, the French system was not able to hold its own against the American system, especially for medium-size yarns. Mills found it impossible to compete against the four operations of the American system, lower maintenance costs, and higher production per manhour.

An added advantage of the American system was the fact that it is especially suitable for processing man-made fibers such as Orlon, Dacron, Acrilan, and nylon and blends of wool with these fibers.

French spinners were putting up a good fight by streamlining their equipment and reducing the number of operations, but with only moderate success.

Modern Setups Vary

The setup of the operations are generally:

1. Two or three intersecting operations
2. One or two open-gilling operations
3. One to three porcupine drawing operations

Autolevellers are used in many mills to great advantage although others claim that they obtain satisfactory results with stop motions that stop the machine if a sliver at the back of the machine breaks.

The trend is to use two intersecting operations instead of three. The feed weight of the top is usually 250 grains per yard, and the top is being reduced in two or three operations to 40 or 50 grains per yard.

The number of doublings on the first machine is four to eight and drafts are 6 to 8.5, but higher drafts are sometimes used. In some mills that use the Autoleveller, 10 to 12 tops at 250 grains per yard are fed to the first machine and drafts of seven to nine or higher are applied.

One or Two Doublings Are Used

Some mills use only one doubling after the Autoleveller. Two doublings are sometimes used with drafts of seven to nine.

The sliver is then usually fed to the open gill box. The cans from the high-speed intersectors are placed at the back of the open gill box. The creel usually has to be changed for this operation. Drafts up to seven are applied.

The next step is usually to the porcupine drawing frames after one or two open gill-box operations. The number of porcupine drawing operations depend on the yarn size to be spun. Two doublings are usually made, and drafts up to 5½ are possible where high-draft devices are installed.

One mill running 1/22s to 1/24s yarn has this setup:

1. Pin drafter with stop motions
2. High-speed intersector
3. Open gill box
   One doubling, 5 to 6.5 draft
4. Finisher
   Two doublings, 4 to 4.5 draft

New Machines Are Coming

The French system is not standing still. A new machine was recently developed that may prove a boon to French spinners and allow them to compete better with other spinners. The new machine is a high-draft finisher with a three-over-four drafting field and rub aprons without porcupine rolls.

Higher drafts are obtained, handling is simplified, and an even roving is produced. The production and maintenance costs will be nearly in line with those of other systems.

This is the setup used with the new finisher:

1. High-speed gill with or without Autoleveller
2. High-speed gill
3. High-speed gill
4. High-draft finisher without porcupine

The third operation is sometimes omitted when the first high-speed gill is equipped with an Autoleveller.

Even if the production cost is slightly higher than for other systems, mills may still be able to compete. French spinners can use shorter tops and tops with irregular staple diagrams that can usually be purchased at lower prices.

A new group has been added to the new top contract valuations on the New York Wool Exchange. This group covers 64s top designated C 5 and consists of tops with average staple length of 2.25 ins.

These tops are valued at a 7% discount against the standard top C 3 with a staple length of 2.55 ins. The shorter tops can be used to great advantage by French spinners; so there would be a price advantage in purchasing the shorter tops.

At present, the French system is used mostly for fine yarns, short-staple wools, wools and irregular staple diagrams, special yarns of cashmere or wool and cashmere, and fine qualities of yarns made of soft and not-too-strong wool.

The American System

The American system uses tops of low oil content. The tops are dry-combed and contain 1 to 1.5% oil. The fibers are controlled by pins and on the roving frame by aprons. Twist is inserted on the roving frame, but the twist is softer than that used on the Bradford system.

The American system was originally a modified cotton system with regular drawing frames for the first three operations. Here's a typical setup for the period just after World War II:

1. Breaker drawing frame
2. Intermediate drawing frame
3. Finisher drawing frame
4. Roving frame

The greatest step forward was made when pin drafters were introduced. This step resulted in the production of even sliver that could be processed after one roving operation into an even yarn.

A typical setup for the American system in 1950 was:

1. High-speed gill (pin drafter or gill reducer)
2. High-speed gill (pin drafter or gill reducer)
3. High-speed gill (pin drafter or gill reducer)
4. Roving frame

Staple Lengths Are Higher

Originally, the staple length was limited and the American system could be used only for fibers from 2 to 4 ins. Today, the drafting systems have been modified so that fibers up to 7 ins. can be processed without difficulty.

There are three variations of the modern American system:

A. 1. Pin drafter or gill reducer (with or without Autoleveller)
2. Pin drafter or gill reducer
3. Pin drafter or gill reducer
4. Roving frame

B. 1. Rotodrafter breaker
2. Rotodrafter intermediate
3. Rotodrafter finisher
4. Roving frame

C. 1. High-speed intersecting gill with Autoleveller
2. High-speed intersecting gill
3. Roving frame

The American system is being used to great advantage for wools with regular staple, for blends of wools with man-made fibers, and for man-made fibers alone. Because the production cost of American-system yarns, especially for medium sizes, is low and the maintenance of equipment is low, the American system has become the most-used system.

High Bulk Yarns Are Important

High-bulk yarns find an important niche in modern worsted systems. These yarns are generally spun on the American or the Bradford system but very rarely on the French system.

The yarns have found wide acceptance because of their lofty appearance, agreeable hand, warmth, and easy washability. They are used chiefly in knitted outerwear.

Yarns of special qualities can be produced by blending man-made fibers with high- and low-shrinkage components in the same yarn.

When the material made from this yarn is treated with steam or boiling water, the high-shrinkage fibers shrink and the diameter of the yarn increases and gives the yarn its lofty and bulky appearance.

Blends Are Run on Staplers

Blends of synthetic fibers with wool can also be processed on the Turbo stapler. The slivers usually produced have a fiber length of 6 to 9 ins.

This is a usual setup for high-bulk yarns:

1. Turbo stapler
2. Turbo fiber setter
3. Breaker
4. Three pin-drafter operations or one high-speed gill with Autoleveller followed by a high-speed gill or reducer.
5. Roving frame
6. Spinning

American Spinning
1/24s knitting yarn—130 lbs. per hr.

Operation	Machine	Operators	Machine	Operators
1	Pin drafter or gill reducer		Gill reducer with Autoleveller	1
2	Pin drafter or gill reducer	1	Gill reducer	
3	Pin drafter or gill reducer		Roving frame	A
4	Roving frame	A	Spinning frame	B
5	Spinning frame	B		

A—not a full workload
B—one spinner for 840 to 960 spindles, one doffer for about 3,000 spindles

DRAWING PRODUCTION per manhour is about 65 lbs. The first three operations can be replaced by Rotodrafters to produce about 200 lbs. per hr.

The production of the stapler, which stretches and breaks the tow, is about 100 lbs. per hr. Other machines are geared for a similar output. The fiber setter sets the fibers under steam pressure.

The breaker reduces the fibers from a staple length of 8 ins. to a maximum length of about 6½ ins.

Several mills use one or two additional gilling operations before drawing to insure proper blending of the fibers. These gilling operations are made before the pin-drafter operations.

Usually high-draft roving frames and high-draft spinning frames suitable for worsted yarns are used for these operations. Several mills use a slightly modified Bradford setup with a Bradford roving frame and a Bradford-type spinning frame.

What About the Future?

While changes in all three worsted systems have been phenomenal over the last 10 years, we are still in this period of change. Higher processing speeds, fewer drawing operations and doublings, and higher drafts are still being developed.

Evenness testers have provided a tool to discover whether sliver or yarn evenness suffers through higher speeds and drafts and fewer doublings. The Ontario Research Foundation recently tried to determine which system will give more-even yarn when new machinery for all systems is used.

No conclusive answer could be given. The Bradford system can, however, produce slightly better yarn.

Tests showed that yarns produced on the short American and Ambler systems were as even as French- and Bradford-spun yarns, provided the short system is properly used.

Raw Material Must Be Right

Even yarns can be produced on the short systems if operating conditions are carefully controlled. The raw material and the quality of the top must be watched closely. Tops with few neps and good evenness will cause fewer difficulties in processing and produce a satisfactory yarn with fewer doublings.

American top makers are cooperating with spinners to produce even tops with low nep counts. Top-breaking machines have also contributed to the manufacture of even tops with more-

even staple diagrams. A number of mills, including combing mills, are using these machines with good results.

Maintenance cost is an important consideration. The French system, where the maintenance of open gill boxes and porcupines is rather high and the repinning of fallers and porcupines is an addition expense, is particularly costly to maintain. New machines are solving this problem.

American System Is Economical

As far as workloads are concerned, the American system is the most economical system. New developments are enabling Bradford and French spinners to come close to American-system workloads with the exception of spinning.

Workloads for spinning in the American system are from 800 to 1,100 spindles per operator. In the French and Bradford systems, the workloads are between 600 and 800 spindles, depending on the yarn quality and size.

These figures are sometimes misleading because in many spinning mills there are a number of helpers, cleaners, and doffers who assist the operator; and they are not counted in reports. The number of pounds produced per operator should be figured to get a more-accurate figure.

Worsted spinners now have superior spinning equipment, but new equipment is being developed and tested.

New types of pin drafters with speeds of up to 1,500 faller drops per minute will soon be used. New leveling devices are being tested, and new finishers will reduce operations still further.

Spinners have reduced steps and doublings to meet the particular requirements of the user. The evenness of the yarn is often determined by the end use. Yarns for hand knitting may not have to be perfectly even. Yarns for machine knitting must be very even, while yarns for weaving must be of excellent evenness.

Worsted spinners were in a difficult position during postwar years. In addition to the machinery changes, mills had to cope with difficult market conditions, high wages, the movement of mills to the South, and new fibers and blends of these fibers.

Many fibers other than wool are spun on the worsted system today, and these same fibers are also spun on the cotton system. Worsted yarns spun from these fibers, however, have distinct characteristics. Manufacturers have tried to imitate these characteristics on other systems.

Wools can naturally be spun to the greatest advantage on the worsted systems because the natural fiber length is preserved and the yarn spun on the worsted system has more-desirable qualities. So much of the future depends on the position and price of wool in world markets.

Worsted Spindles

(Thousands)

Year	Total Spindles in place	Not specified	Mule (No.)	Ring (No.)	Flyer (No.)	Cap (No.)	Mule (%)	Ring (%)	Flyer (%)	Cap (%)
1947	1,921	87	503	590	7	734	27	32	....	40
1955	950	....	33	709	14	194	3.5	74.5	1.5	20.5
1956	809	....	14.4	628	10	156	1.8	77.6	1.2	19.4

SPINDLES in place have changed radically. Mule spindles have fallen from 27% in 1947 to 1.8% in 1956. Cap spindles have also been drastically reduced.

Research Speeded Up

A vast research program is going on all over the world today to provide manufacturers with more-uniform qualities of wool and economic processes to produce better wool fabrics to suit specific end uses.

Progress is being made to obtain better methods to make wool shrink resistant, wrinkle resistant, moth resistant, and mildew resistant. Tests are being made to enable manufacturers to impart permanent pleats to certain fabrics. Wool wash-and-wear fabrics are being developed.

The position of wool in the textile mill depends partly on the success of this research. Price, however, will be a tremendously important factor. If prices increase, consumption will tend to decrease and manufacturers will turn increasingly to man-made fibers.

Goat hair, mohair, cashmere, and other hair fibers will continue to be spun to advantage on the worsted system.

Yarns produced with man-made fibers from tow-converting machines have a long staple and can be spun successfully at present only on worsted systems.

Price Must Be Lowered

An important point will be whether the worsted system will be able to compete pricewise against yarn spun on the cotton system. One of today's successful fabrics is made from 50-50 Dacron-wool blends.

This blend can be spun to greatest advantage on the worsted system. If necessary, shorter tops can be used or the tops can be processed on a top-breaking machine to reduce the staple length to about 2½ ins. so that this blend can be spun on a cotton system or a modified cotton system.

The price for these blends spun on the cotton system is lower than for those spun on the worsted system, and the price difference varies with the setup of the particular worsted spinner.

Although fabrics of this blend made from yarns spun on the worsted system are better and more desirable, they may not be enough better to justify the price increase that is necessary when the yarn is spun on the worsted system.

Therefore, the worsted system must also be able to compete successfully with the cotton system if it is to remain important for yarns that can be spun on either the cotton or the worsted system.

Further Losses Will Come

Some worsted spinners, especially those spinning knitting yarns, already feel the encroachment of filament textured yarns. Although this development may not be alarming for the time being, a number of spinners will be affected.

Further losses must be expected through the increase in the use of nonwoven fabrics. Furthermore, a substantial part of the business lost in previous years will not be recaptured by worsted mills.

Even though the number of spindles on the worsted system has gone down 60% since 1947, some of the remaining spindles are not fully and steadily employed.

Mills that have not modernized will find the competitive position more difficult, and they will have to close down or modernize to compete against streamlined modern U. S. mills and foreign mills.

After reorganization and modernization programs, mills will retain a steady position. Although the number of spindles will possibly decline still further, the progressive spinners will emerge stronger and better.

1957 Rio Grande Cotton

Variety	DPL 15		DPL TPSA						All varieties	
Location	Lyford		Edcouch		Harlingen		Weslaco		All locations	
Season	1956	1957	1956	1957	1956	1957	1956	1957	1956	1957
Classification										
Grade	M	SM	SM	SM	M	SM	M	SM	M	SM
Staple length (ins.)	1 1/32	1 1/16	1 1/16	1 1/16	1 1/16	1 1/16	1 1/16	1 1/16	1 1/16	1 1/16
Fiber length (Fibrograph)										
Upper-half mean (ins.)	1.10	1.10	1.00	1.16	1.00	1.10	1.03	1.06	1.01	1.08
Uniformity (ratio)	80	82	80	79	80	80	81	79	80	80
Fiber fineness and maturity										
Micronaire reading	4.5	4.7	4.4	4.6	4.6	4.6	4.4	4.4	4.5	4.6
Maturity index	79	81	80	80	79	81	80	80	—	—
Fiber tensile strength (Pressley)										
Zero gauge (1,000 psi.)	86	83	80	85	78	80	80	81	81	82
Picker and card waste (%)	7.7	8.3	7.4	8.6	7.7	7.9	7.4	8.0	7.5	8.2
Neps (per 100 sq. ins. of card web)	11	8	12	7	11	8	15	11	12	8
Yarn-skein strength										
22s (lbs.)	121	125	119	121	116	122	115	117	116	121
50s (lbs.)	41	44	40	43	40	43	40	42	40	43
Average break factor	2,356	2,475	2,309	2,406	2,276	2,417	2,265	2,337	2,301	2,409
Yarn appearance										
22s (grade)	B	B+	B	B+	B	B+	B	B	B	B+
50s (grade)	C+	B	C+	B	C+	C+	C+	C+	C+	B−
Yarn-appearance index (average)	105	115	105	115	105	110	105	105	105	111

1957 COTTON in the Rio Grande Valley shows a tendency toward higher yarn strength, better appearance, and higher upper-half mean length than 1956 cotton grown in the same area. Some of this improvement is credited to better ginning methods.

Early 1957 Rio Grande COTTON Shows Good Qualities

USDA fiber and spinning tests on the first pickings of Rio Grande cotton show that in comparison with 1956 cotton—

- **Yarn strength is up**
- **Yarn appearance is better**
- **Upper-half mean length is greater**
- **Neps are fewer**

By F. L. GERDES, Cotton Technologist, USDA, Retired

HIGH YARN STRENGTH AND GOOD APPEARANCE are indicated by early ginnings of the 1957 cotton crop of the Rio Grande Valley, Texas. Grades are excellent, and staple is good.

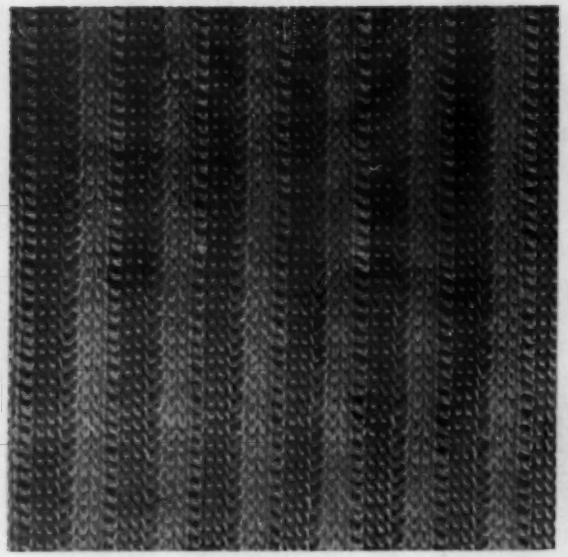
While the crop yields were disappointing, the quality is gratifying to growers, since high-grade cotton has commanded prices as high as 36 to 38¢ per lb. this year. The soil-moisture condition was a contributing factor but not to the extent that it affected the staple length as in other years of poor yields.

Compared with the 1956 crop, the current crop shows a tendency toward higher yarn strength, better yarn appearance, comparable staple length, and higher upper-half mean length. Fiber-uniformity values show no differences between the two seasons; each value is highly desirable.

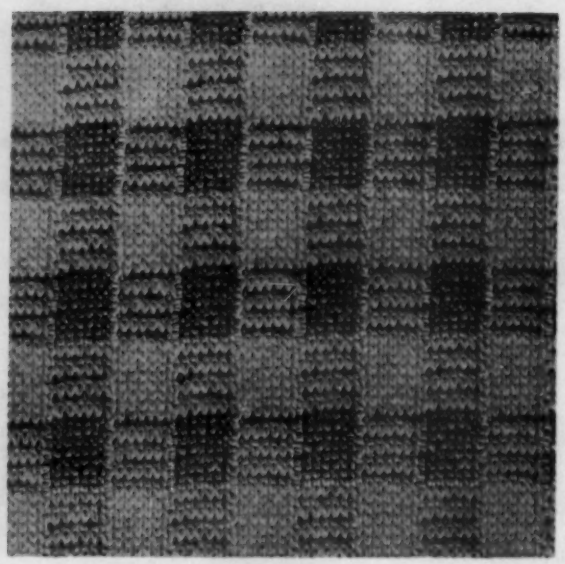
Neps in the card web were significantly fewer for the 1957 cotton as compared with the 1956 cotton. This

CONTINUED ON PAGE 202

Based on data from USDA fiber and spinning tests.



KNITTED CORDUROY is made on pattern-wheel machines from two-ply ingrain yarns by setting up the wheels with three jacks in and three jacks out.



KNITTED CHECKS are also made on pattern-wheel machines from cotton, wool, and rayon yarns in two colors by a clever arrangement of yarns and wheels.

Fair-Tex's KNITTED FABRICS *Have Woven Characteristics*

Knitted fabrics made in special constructions and with special finishes resemble such woven fabrics as ginghams, foulards, and corduroys. They are being used for such purposes as blouses, skirts, dresses, swimwear, and coats.

GINGHAMS, FOULARDS, FLEECES, CHECKS, AND CORDUROYS are just a few of the knitted fabrics produced at Fair-Tex Mills, Inc., Catasauqua, Pa. These knitted fabrics are not made to imitate woven fabrics, but they have many properties of woven fabrics.

Fabrics are knitted on a large variety of circular knitting machines in stitch constructions that have little stretch. Special finishes are applied to the cloth to give further stability. Other fabrics have rubber yarns laid in them to make them more elastic for such end uses as bathing suits.

Cotton fabrics constitute 60% of the total output of Fair-Tex's fabrics. Orlon and wool, Orlon, Acrilan, Dacron, and nylon account for 25 to 30% of fabrics; and the remaining 10 to 15% are woolen and worsted fabrics.

The yarns are spun according to the end use of the fabric. End uses range from underwear to 16-oz. coat fabrics and include such garments as sweat shirts, sports jackets, dress fabrics, bathing suits, blouses, skirts, pajamas, and scarves.

There are two major style changes each year, but an in-between holiday season has recently been introduced. Three color lines are made in all styles.

A teletype system keeps the mill in close touch with its New York office. The system is connected with the production office and the dyehouse.

Orders are received by teletype and put into production straight away. Yarn is ordered from New York, and a large inventory is kept at Catasauqua.

Samples Are Kept on File

Color cards for each style are kept on file in the production office. Tickets are made out for production routing, and duplicate tickets go to the dyehouse.

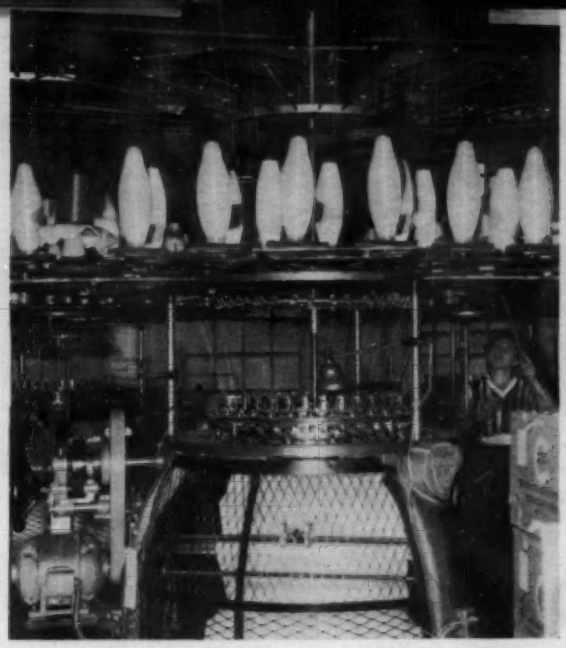
Swatches of fabrics are kept on file in the knitting room, and knitting instructions are kept in a similar file. Samples are planned in New York and in Catasauqua.

Certain machines are kept aside to knit samples. For instance, out of a total of eight 26-in. 18-cut Supreme 32-feed automatic striper machines with pattern wheels, one machine is kept busy knitting samples.

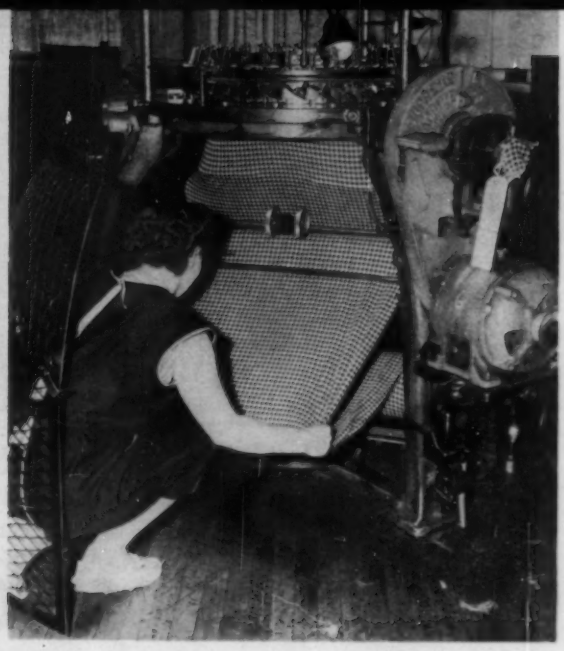
Setup instructions are given to the mechanic, and samples are made to the best running stitch. The sample is sent to the dyehouse, and a width and yield check is made after finishing.

Knitted corduroy fabrics are made on the Supreme machines from two-ply ingrain yarns. Fine vertical stripes are produced in solid or complementary colors by setting up the pattern wheels with three jacks in and three jacks out. Different effects are also made by running cotton and rayon yarn on alternate feeds.

Fleece fabrics are knitted on Supreme sinker pattern-wheel machines from nylon yarn. The yarn is run



NYLON YARNS are knitted directly from large pirns to make fleece fabrics. Colored yarns are sometimes placed at two opposing feeds to produce spot effects.



KNITTED GINGHAM is produced on this machine, which has a yardage counter to keep rolls the same size and to check the fabric yield and quality.

directly from the pirn, and spot effects are sometimes put in the fabric by knitting colored yarn at two opposing feeds.

Pattern-wheel machines are used to produce knitted gingham plaids in two colors in wool, cotton, and rayon yarns. The checks are made six wales wide and eight courses deep by pattern-wheel and yarn arrangements.

Elastic fabrics for leotards and bathing suits are made in plain and fancy designs. The rubber yarn is laid in the fabric with the aid of pattern wheels, and Kidde compensators are used on the rubber feeds to control the flow of the rubber to the needles.

Machines that knit nylon are segregated from other machines with curtains made from Mylar. The edges of the curtains are fused together to keep lint from other yarns from getting on the nylon fabric.

Each machine is equipped with a yardage meter, which sits on the take-up rolls. Each fabric roll is cut when it is 30 or 40 lbs. in weight. The length of the fabric is then calculated, and the knitter stops the machine when the correct length has been knitted.

Each roll is weighed when it leaves the knitting machine, and the yield is calculated as a check on fabric quality. A mechanic also checks each machine every morning by counting the stitches per inch. The knitting ticket shows the correct stitch, and the machine is adjusted if the stitch is not right.

The problem of keeping spare parts for such a variety of knitting machines has been met with a well-equipped spare-parts room. A complete inventory of parts for all knitting machines, including cams, cylinders, stop motions, and motors, is maintained in this room. A simple ready-reference catalog system enables maintenance personnel to draw spare parts quickly for machine change-overs or repairs.

Equipment in the dyehouse includes stainless-steel dyebecks up to 1,000-lb. capacity. Developed, direct, and sulfur colors are used to dye cot-

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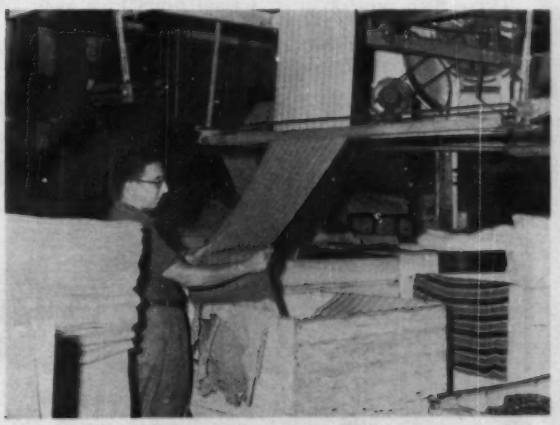


RESIN FINISHES are applied to this fabric to give the fabric stability and to guard against excessive shrinkage. Production is 12 yds. per min.

CALENDERING is closely watched to keep the stripes straight. Yield and width are checked often. The width is adjusted according to results of wash tests.

FIRE-PROTECTION PROGRAM protects 55 fire-resistant buildings spread over 30 acres at Magee.

FIRE-PROTECTION Program Cuts Fire Loss at Magee

A fire-protection program manned by company employees at Magee Carpet Co. is giving the following results—

- **The fire-frequency rate is down**
- **Damage is slight from fires that occur**
- **Insurance dividends paid the cost**

A RECENTLY ORGANIZED FIRE-SAFETY PROGRAM at Magee Carpet Co., Bloomsburg, Pa., has paid off well. The fire-frequency rate is down, and damage from fires that do occur is slight. But best of all, the program has been financed with actual insurance dividends received from the low fire loss.

Magee's Bloomsburg plant embraces 55 fire-resistant major structures spread over a 30-acre tract. Some structures are four stories high, and all of them are divided into smaller areas with fire walls and self-closing fire doors.

The 1,250,000-sq.-ft. plant houses machinery that produces more than 250,000 sq. yds. of carpets annually. Many of the company's 2,000 employees take part in the volunteer fire-safety program.

Static Sparks Cause Fires

Until the present program was organized, there were periodic fires in the weave rooms. Most fires were in weave rooms with wilton looms, where fly accumulated in spite of good-housekeeping habits. Static sparks often ignited the fly.

These flash fires occurred several times each year, and

KIDDE DRY-CHEMICAL portable extinguishers of 20-lb. capacity are used in weave rooms to put out flash fires.

CARBON-DIOXIDE portables are available in plant and office areas where electric fires can occur.

FIRE-ALARM BOXES with breakable glass are located strategically throughout the plant to sound location-coded signals.

FIRE TRUCK made from an army vehicle pumps 750 gals. per min. to the highest roof at Magee.

damage ran from $4,000 to $12,000 each. In addition, they were normally severe enough to open water sprinklers. The water caused a problem where the fire occurred and frequently wet machinery and materials on lower floors. But machine downtime was the greatest loss.

Magee engineers took stock of its fire-damage vulnerability and tightened up its general fire-safety program. They started an employee-education program and re-equipped the plant with the newest and most efficient fire-fighting equipment.

Water Sprinklers Give Protection

Magee's present first line of safety lies in its water-sprinkler protection. Except for its boiler houses and dyehouses, all structures are equipped 100% with water sprinklers.

Water is normally drawn from city water mains at pressure of over 60 psi. Secondary supplies are available from a 100,000-gal. aerial tank and a 250,000-gal. suction tank serviced by one electric pump and one steam pump.

Water-hose racks placed for complete coverage of all interior areas are a part of the system. Water hydrants are throughout the outside grounds. Control valves are conspicuously marked and are easily accessible.

Portable Extinguishers Are Fast

First-aid fire-fighting equipment is also important in Magee's safety program because the product it manufactures is inherently combustible. In the revamped program, portable extinguishers are available to put out any blaze almost the moment it flashes.

Now five basic extinguishing agents are standard: (1) antifreeze, (2) water, or (3) soda acid for ordinary fires, (4) carbon dioxide for electrical fires where a fire has to be quelled without damage to the equipment by the agent, and (5) dry chemical for use when getting the fire out fast is the most important factor.

Several hundred additional new and efficient portable extinguishers were bought to replace older extinguishers and to give adequate protection. Most of the new units are dry-chemical units. Today 1,029 portable units are available for first-aid fire fighting.

Signs Tell How To Use Equipment

The portable units are marked by red signs about 10 ft. from the floor. Each sign gives: (1) the type of unit, (2) how to use the unit, and (3) what to use the unit on. Each unit also has a metal Magee decal and a recharge card record.

A fire truck was made from an army vehicle. A pump on the truck pumps 750 gals. per min. and raises a vertical stream well above the highest roof on the Magee property.

The truck has gas masks, large-capacity portable extinguishers, and other similar equipment. A well-trained crew of eight men operates the fire engine.

Employees Are Trained for Firemen

Many of the company's employees were volunteer firemen before the program was organized. To augment these experienced men, fire-fighting-instruction courses were organized for all guards, foremen, and maintenance employees.

These men trained employees under their supervision to use the fire-extinguishing equipment provided in the plant areas where they work. And finally, fire-fighting demonstrations were organized for all employees.

Since the new program has been in effect, dry-chemical portable units in the weave rooms have quelled all loom fires immediately with little damage and before sprinkler heads opened.

What Happens When a Fire Starts

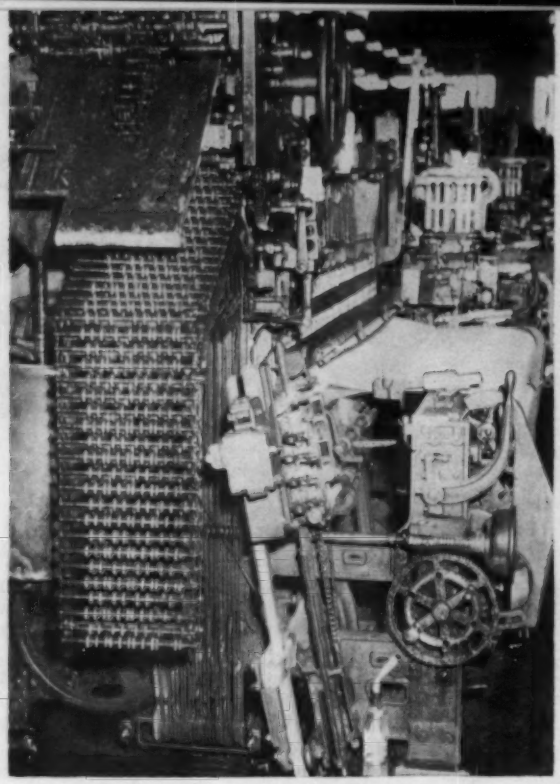
When a fire starts, an alarm with a location-coded signal sounds throughout the plant. These pull-box alarms are in conspicuous places all over the plant.

Then maintenance men and other members of the volunteer fire department rush to the trouble spot to operate sprinkler control valves and provide other emergency services.

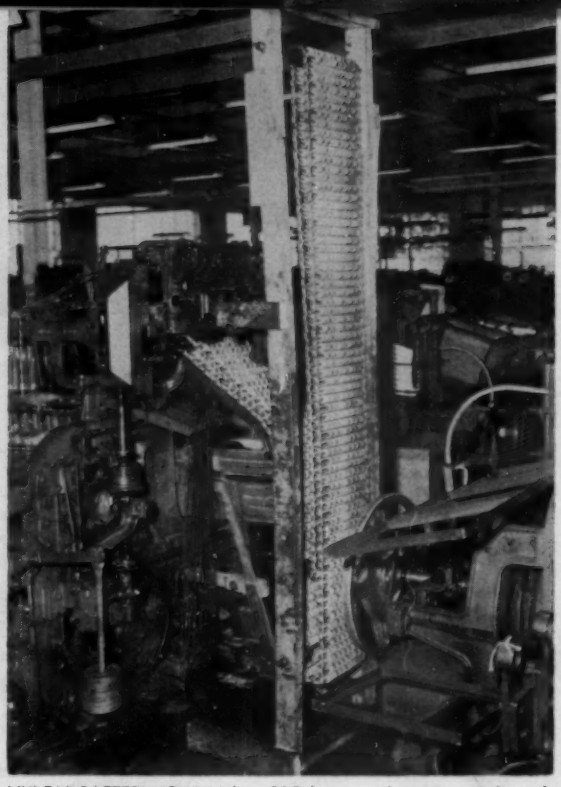
In the meantime, local fire fighters have attacked the blaze with the portable equipment nearby.

CONTINUED ON PAGE 198

COMPANY CARS and trucks have 5-lb. dry-chemical portables with gauges to show operating condition.



WEAVING is done on C&K W-3 looms. The pattern chain is made of nylon.



NYLON PATTERN CHAIN has 215 bars, and yet it weighs only 80 lbs.

Columbus Fiber Mills Weaves SARAN and PAPER FABRICS

• Automotive upholstery fabrics comprise 80% of the output of Columbus Fiber Mills Co., Columbus, Ga. In addition to saran and paper, the mill also uses rayon and nylon yarn in its weaving operations. This mill is one of the first to use nylon pattern chains on its looms.

AT COLUMBUS FIBER MILLS CO., Columbus, Ga., automotive fabrics are woven from saran and paper stock. Some rayon and nylon are also used. Other fabrics include decorative and lamp-shade fabrics and cloth for window displays, seat covers, and awnings.

Since styles are constantly changing in automotive fabrics and individuality of patterns is important, the mill changes the patterns on the looms very often. Therefore everything possible is done to keep methods and equipment versatile.

Loomfixers work closely with the sample department to start new patterns accurately and fast. The laboratory checks the first yard of cloth as soon as it is woven. Foremen check closely with loomfixers and supervise a constant fabric-inspection system.

The looms are C&K W-3 of 72-, 82-, and 92-in. width. They are equipped with double-index Knowles heads with forward and reverse multipliers. Some of the pattern chains contain as many as 215 bars.

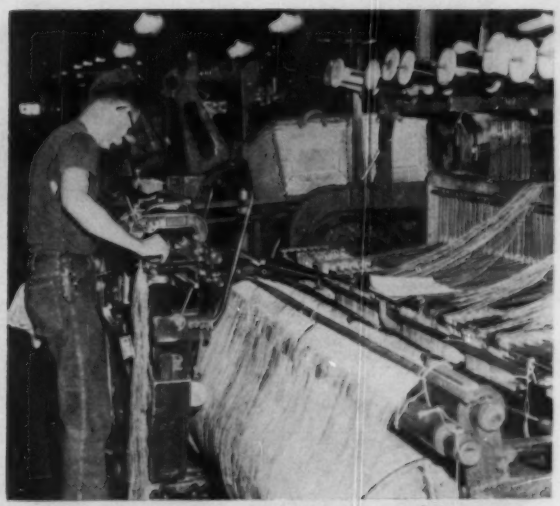
The newest equipment added at Columbus to improve mill versatility and reduce the time in changing patterns is nylon pattern chains made by H. F. Livermore Corp. The risers, sinkers, and links of these chains are made of nylon. The bars and bar clips are steel.

Nylon Has These Advantages

Advantages of the nylon chains listed by the mill are: (1) they are light, the weight is only about one-third as much as an all-metal chain, and the light weight makes the chain easier to handle and install; (2) the nylon parts need no lubrication, but oil from the head does not affect them; (3) different colored risers make it easier to build and check the chains; and (4) nylon causes less wear to connecting parts.

The nylon chains have not been in

LOOMFIXERS inspect every part of the looms on their sections regularly.



WARPS are tied at the loom with a portable machine unless the style is changed.

use long enough for comparative figures as to service life, cost, and maintenance. But the mill used the chains on a small scale long enough to become convinced of their advantages.

New styles and patterns of fabrics are constantly being developed in the mill. Experimental samples are woven by the sample department on its looms.

With so many different styles being woven at one time on its 107 looms, the mill has found it necessary to devise a positive identifying system. When a new warp is tied on a loom, a card is attached to the loom arch. This card lists the cloth constuction and also has a checklist of things to be inspected. The shift foreman checks the reed, harnesses, filling, and cloth width.

The first yard of cloth woven from the new warp is taken to the laboratory for analysis. If the cloth meets specifications in every way, a swatch is sent back to the weave room. This swatch is then attached to the card on the loom for positive identification and comparison purposes.

Automotive fabrics are costly, and there is no market for seconds. The mill has regular inspection and main-

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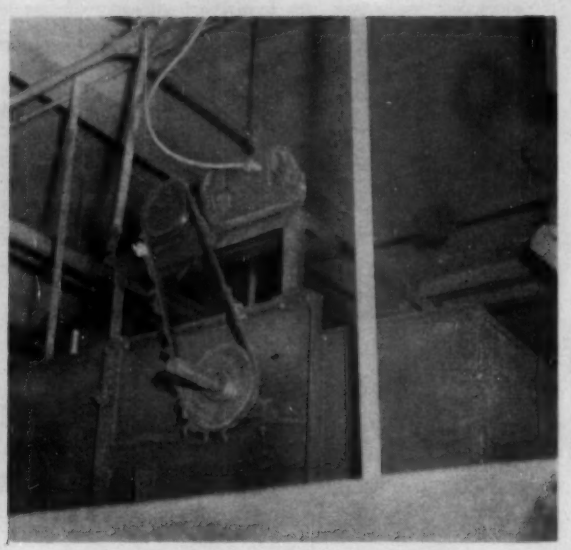
WEAVING automotive fabrics requires a high degree of skill and concentration.

FILLING is both white and colored. Many intricate patterns are woven.

REJECT LAPS are fed into a mill-built overflow hopper that tears them up and puts the stock into the rake distributor.



GEARHEAD MOTOR installed on the rake distributor reduced downtime caused by belts slipping and flying off the drive.

At Carolina Mills, Inc.—

Carding and Spinning Improvements Double FLANNEL Production

Carolina Mills, Inc., Mill No. 3, Newton, N. C., increased Canton-flannel production from 100,000 to 200,000 yds. per week by—

- **Revamping the opening room**
- **Adding 18x42 card coilers**
- **Speeding up drawing frames**
- **Installing 12x7 roving frames**
- **Rebuilding spinning frames**

AN EXTENSIVE MODERNIZATION PROGRAM has doubled production of Canton flannel at Carolina Mills, Inc., Mill No. 3, Newton, N. C. At the same time, the total number of employees was reduced from 350 to 208. Most of the improvements were made in the carding and spinning departments.

Carolina produces several grades and weights of cotton flannel that is used in the manufacture of work gloves. For these gloves, warp yarn is made from a 20-bale mix of $\frac{7}{8}$-in. cotton. Filling is made from 20 bales of $\frac{7}{8}$-in. cotton and 10 bales of comber noils.

Special Hoppers Blend Noils

The noils are fed into two F-5 blending hoppers followed by a No. 11 condenser and a third F-5 hopper. These hoppers regulate the percent of noils in the final mix.

The cotton is fed into three F-7 feeders attached to No. 15 openers, and reworkable waste is fed into a No. 5 hopper. Stock from the seven hoppers is cleaned in a line that consists of a No. 11 condenser, a vertical opener, a No. 11 condenser, a Superior cleaner, and an Aldrich porcupine-beater section. Waste averages 1.25%.

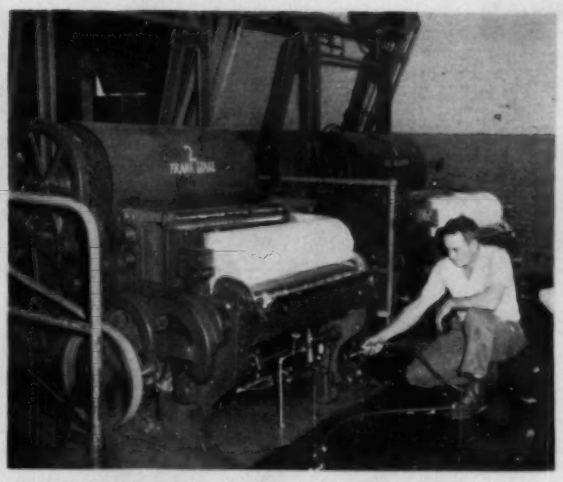
One man per shift operates the opening room, which produces about 1,100 lbs. of stock per hour.

Reject Laps Are Torn Up

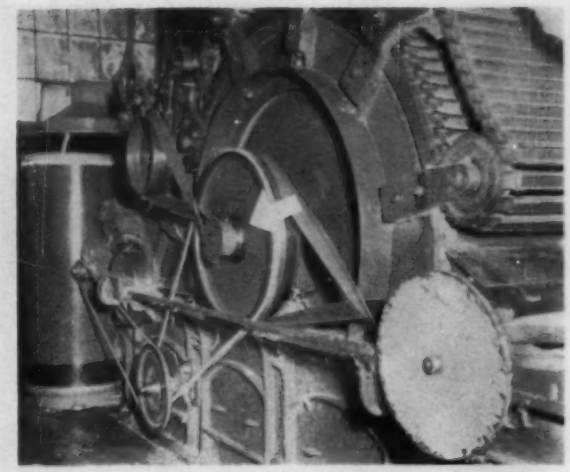
The picker room has three rebuilt Kitson pickers and a mill-built overflow hopper for reject laps. The hopper tears up the laps and feeds them into the rake distributor.

The single-process pickers were cut down from three to two beaters and equipped with pneumatic lap controls and Aldrich synchronizers. Perforated screens were added to reduce waste.

The three-blade front beaters run



PICKER MAINTENANCE was improved by assigning each machine to a special fixer and painting his name on the picker.



SMALL PULLEY (arrow) was installed on the shaft of card cylinders to reduce flat speed to 1¼ ins. per min.

1,025 rpm., and the back porcupine beaters run 940 rpm. Front-fan speed is 1,350 rpm., and back-fan speed is 1,220 rpm.

A 14½-oz., 55-yd. lap is produced under 60 lbs. of pressure in 6 mins. Before the changes were made, the same-size lap required 7½ mins. to produce. About 0.50% waste is removed during the picking process. Evenness averages 95% on the Saco-Lowell lap tester, an improvement of 10% since the pickers were rebuilt.

Cards Have 18-In. Coilers

The 60 Saco-Lowell cards were reworked completely. Ten waste cards were converted into regular cards by removing the web pan and adding mote knives and other necessary parts. Perforated screens were put on all the cards to reduce waste. New 18-in. McDonough coilers and 18x42 cans were added.

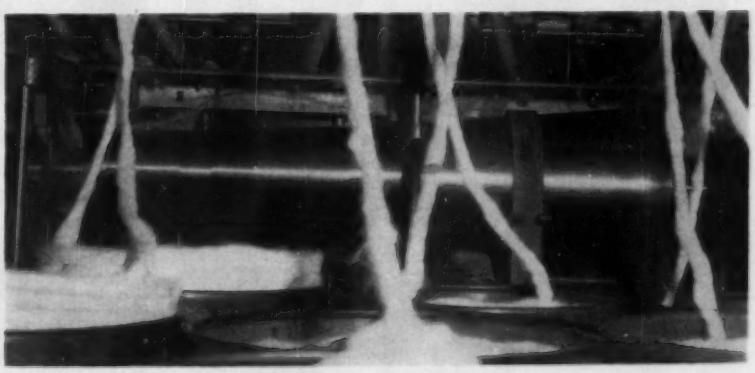
The doors on the back of the cards were equipped with hinges and weights so that they close automatically, and dead weights on the feed roll were replaced with spring weights to stop the flats from rattling.

Filling stock is carded at 23 lbs. per hr., and warp stock is carded at 14½ lbs. per hr. A 60-grain sliver is made. The cylinder runs 187 rpm., and the flats run 1¼ ins. per min. Settings are standard.

Vacuum strips average 0.96%, flat strips 1.85%, and fly 1.30%. Evenness on the Brush tester is 14%, compared with 18 to 20% before the cards were reworked.

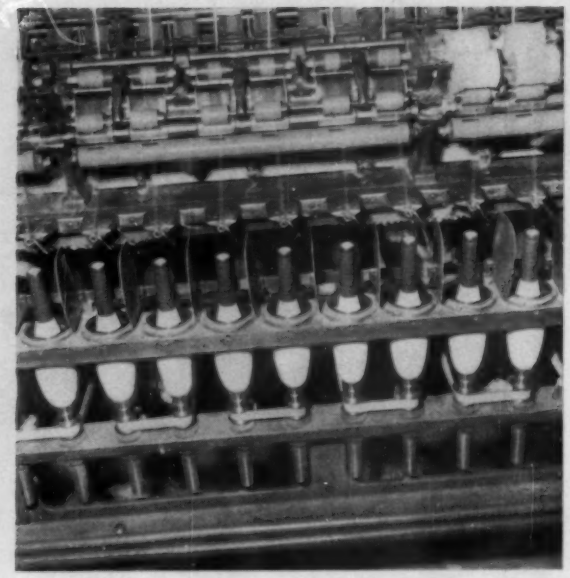
The 36 deliveries of drawing, which are being replaced with new Versamatic frames, run 250 ft. per min. A 60-grain sliver is delivered into 12x36

DRAWING FRAMES have a special ball-bearing drive for the tube gear that eliminates oiling. Frames were changed over to run 250 ft. per min.



OVERSIZE CONE is used on the new 12x7 roving frames to reduce belt slippage and produce more-even work at higher speeds.

TANGLED ROVING is unwound rapidly and converted into reworkable fiber by this mill-built machine that is powered by air pressure.



BASE RAILS were lowered and new spindles and rings were installed on these rebuilt spinning frames. Gauge was increased to 3½ ins.

cans. Sliver is fed from 18x42 cans.

The present drawing frames were modified by adding a ball-bearing drive on the tube gear. This bearing has reduced maintenance and eliminated the necessity for oiling the tube gear.

Evenness, which averages 14% on the Brush tester, is expected to improve when the new drawing is installed.

Old 10x5 roving frames were replaced with six FS-2 12x7 frames. The new 96-spindle frames are 10¼-in. gauge and are equipped with Pneumastop. Oversize cones reduce belt slippage and produce more-even roving.

A 0.55-hk. roving is made for the 3s to 8s filling yarn, and an 0.80-hk. roving is produced for 12.5s to 18.5s warp yarn. Front-roll speed is 210 rpm. for the filling stock and 186 rpm. for the warp stock. Jack-shaft speed is 333 rpm., and spindle speed is 750 rpm. A 55-oz. package is made.

The new frames produce about 50% more stock per manhour than the old frames. Two men per shift run the department.

Spinning Frames Are Rebuilt

Carolina completely rebuilt 34 spinning frames. Twelve 220-spindle Fales & Jenks frames, now on filling, were equipped with 2¾-in. rings, Whitin No. 6 spindles with SKF bolsters, 10-in. bobbins, 8-in. ball-bearing cylinders, Pneumafil, and lint-free creels. Gauge was increased to 4 ins. These frames all have Roth drafting.

Similar changes were made on 12 other frames for warp spinning, except that 2½-in. rings were installed.

Ten Saco-Lowell frames, used for warp spinning, were equipped with Duo-Roth drafting, 9⅜-in. bobbins, 2¼-in. rings, 8-in. ball-bearing cylinders, and 9⅜-in. bobbins. These frames were converted to 3½-in. gauge. No. 6 spindles with SKF bolsters were installed along with Pneumafil and lint-free creels.

Underframe cleaners were installed on all of the frames; and in order to permit the air currents from these

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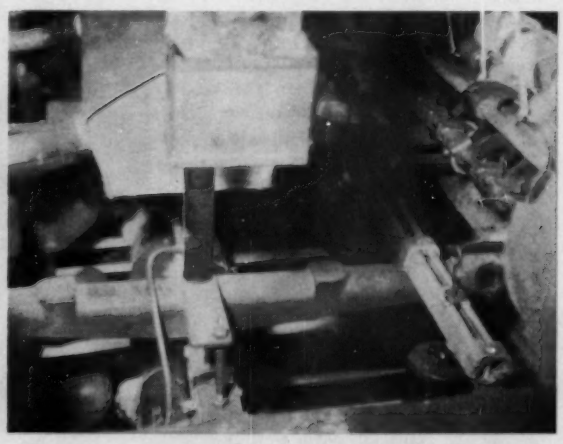
SPINNERS pick their own rolls but do little other cleaning. Lower part of the frame is blown off every 2 hrs.



RECOVERY DUCTS for Pneumafil were designed with slanting sides to permit passage of air from the underframe cleaner.

Part No. 864 Name Filling - grate brush

Bin No. 30 Folio 96 Unit cost $0.19 Minimum 24

30	6 7/22/57	$1.14	$5.70
24	6 7/26/57	1.14	4.56
12	12 8/5/57	2.28	2.28
156	144 received 8/9/57	—	29.64
150	6 8/9/57	1.14	28.50

INEXPENSIVE CARD contains all needed information about an individual machine part.

Card Inventory System Improves This SUPPLY ROOM

• It was hard to keep inventory of machine parts balanced in this mill. One bin would be empty while the adjoining bin would contain a year's supply of another part. Setting up a perpetual inventory system with card files helped solve the mill's machine-parts supply-and-demand problem.

SEVERAL THOUSAND DIFFERENT ITEMS were kept in the supply room of a Southern mill. Formerly the biggest problem was keeping an accurate inventory of parts. Bins would be empty and machines idle because parts were not kept in sufficient quantities or were not ordered soon enough.

An inventory of parts was made monthly. A tag on each bin showed the minimum number of parts so that an order could be placed when the minimum was reached. But the tags were often overlooked, and the bin would be empty before parts were reordered.

Several systems were tried before one was found that had proved successful in other mills. It is a simple card inventory system. The card files occupy only about 15 sq. ft. of floor space; they require about as much room as an ordinary office desk.

The card system has brought this supply room up to date. Here's how it works:

Each machine part has a folio number and a bin number, and these numbers are marked on the card. When a shipment is received, the number of parts is noted on the card with the date and price. The parts on hand are then added for a total of parts in the bin. Each part is subtracted from the total when it is requisitioned. This figure gives a running inventory of parts on hand.

By keeping a record of the parts as they are received and requisitioned, a realistic inventory is possible. A review shows the average daily, weekly, or monthly demand for any item. It also shows the lapse of time between ordering and receiving replacements.

Parts Are Ordered Daily

A green tab is placed on each card when the minimum has been reached. These cards are checked daily, and orders are made out for any parts needed. If the bin is emptied before a new shipment is received, a red tab is placed on the card. A follow-up is made on the order; and if it seems justified, the minimum is raised to prevent a future shortage of that particular part.

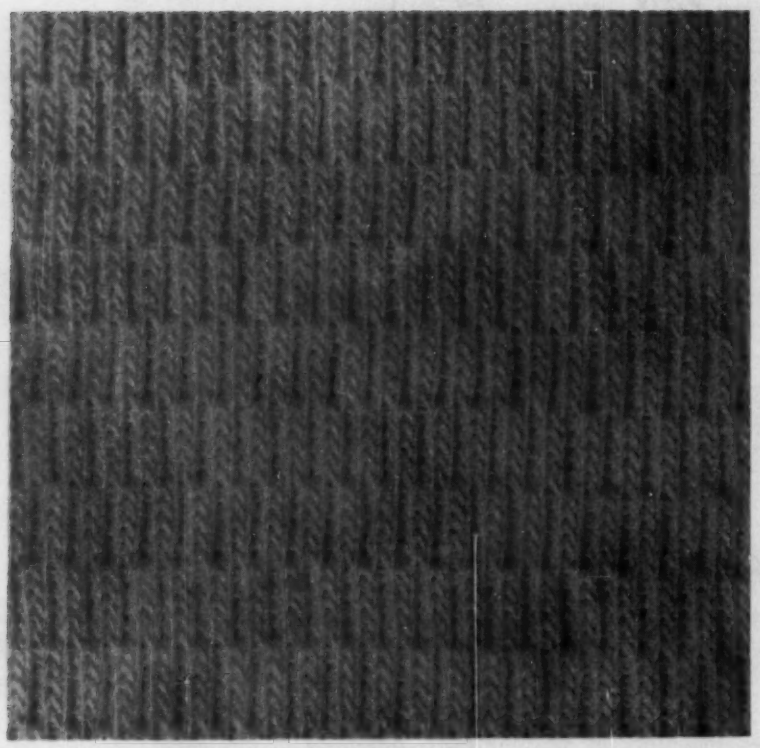
Shortage of parts has been almost eliminated by the card system. The mill has learned a lot about its normal requirements. It is also able to anticipate unusual demands for parts with the cooperation of the department heads. When some major overhauling is planned, the supply clerk checks back over the cards and estimates the number of parts that will be needed for this extra work.

Card Index Is Valuable

The inventory cards, used with a numerical and alphabetical index, form a quick cross index for locating any item in stock. Sometimes a fixer knows the name of a desired part but does not know the order number. At other times, the number is known but the name is not. In either instance, all pertinent information, including the bin number, quantity on hand, price, and rate of consumption, is readily found.

Instead of monthly inventories, the mill now takes only one inventory of the supply parts in the bins each year. The annual inventory is made to find and correct any mistakes made in filling requisitions, receiving shipments, recording, and normal losses of parts.

The card inventory system quickly paid for itself in labor savings. In addition the system improved the efficiency of the supply and purchasing department and improved service to the production departments.



THERMAL-KNIT FABRIC, or waffle cloth, is now used chiefly for underwear; but other end uses such as pajamas, sportswear, and sweaters are being developed.

How Domestic Lace Makes THERMAL-KNIT FABRICS

These fabrics, now used for underwear, are being developed for other end uses. They are made on two-needle-bar raschel machines from 50-in.-wide beams. The edges are sewed together to produce tubular fabric for finishing and cutting.

JUST AS THE T-SHIRT HAD ITS BEGINNING in the Armed Services, the latest fad in underwear fabrics also had its beginning in the Navy during the Korean War. After seeking for some time for a fabric that was warm and comfortable and yet didn't stretch or shrink, the government was presented with a sample of waffle or thermal-knit fabric.

One mill that makes these fabrics is Domestic Lace Mfg., Inc., Englewood, N. J. The fabric is knitted on raschel machines, and 11 machines are installed so far with two warpers.

Warper Makes 50-in. Beams

One warper is a new high-speed Kidde warper that produces 50-in. beams at an average warping speed of 575 yds. per min. These large beams, which hold 22,000 yds. of yarn and weigh 415 lbs. when full, last a full week on the knitting machine.

The 324 ends of yarn are run off three creels, which are battery-creeled by one man. One man attends the warper at all times, and he inspects for broken yarns.

There are no stop motions used. If an end breaks, the operator stops the warper and places a yellow ticket in the warp to warn the knitter.

Warps are built on aluminum beams, which are automatically doffed on a truck by hydraulics. A hydraulically operated press roll helps keep the warp smooth and level and free from ridges.

Machines Have Two Needle Bars

Knitting machines are Kidde Model Cs that have been converted to double-needle-bar machines. Two guide bars are used.

Most machines are 26-gauge machines with 13 needles per inch, but there are some 36-gauge machines in operation. Yarn run on the 26-gauge machines is 20s or 22s combed cotton, while 30s combed cotton is run on the 36-gauge machines.

The knitting machines run at 180 courses per minute. Production is not high, however, because the guide bars lap one course on the front needle bar

and then lap the next course on the back needle bar.

One operator tends three machines. He checks the fabric regularly and watches ends of yarn carefully. If an end is down from the warping operation, the knitter ties an end from a cone of yarn that is placed on the floor. This end is run over the warp beam and into the needles.

Fabric Widths Are All Sizes

Fabric widths are made to customers' requirements. A wide width may be made along with a narrow width, or two widths of equal sizes may be made on one needle bar.

Each machine is equipped with a positive let-off that turns the beams at equal speeds to knit a balanced cloth. Both beams run out together, and the beams are replaced with the aid of a ½-ton hoist that runs along a track over the knitting machines.

Lint is kept off the machines at all times. One man does this job constantly, and he also keeps lint off the floor.

Each machine has a marking device on a shaft near the fabric take-up rolls. The device is a wheel with a reservoir filled with marking ink.

How Selvages Are Marked

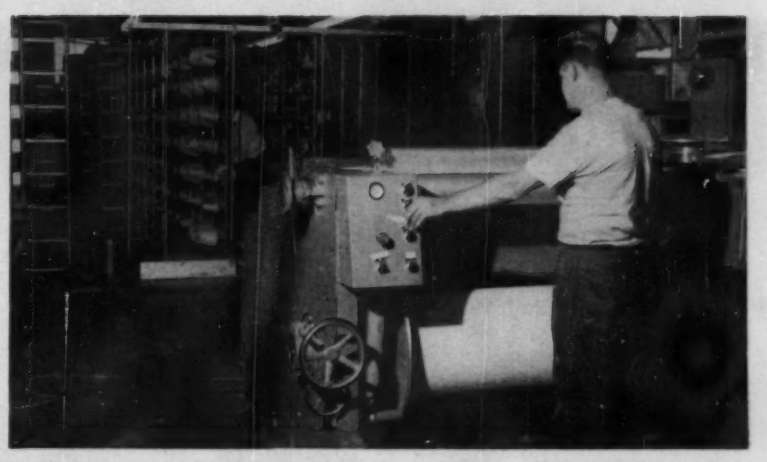
As the wheel turns, a wick on the circumference of the wheel marks each edge of the fabric at the same time. When the fabric edges are sewed together, the marks are brought together and the fabric courses are kept level.

The fabric falls into boxes under the knitting machines, and it is cut off when the web weighs 35 to 40 lbs. The fabric is then moved to the inspecting section, where faults are checked.

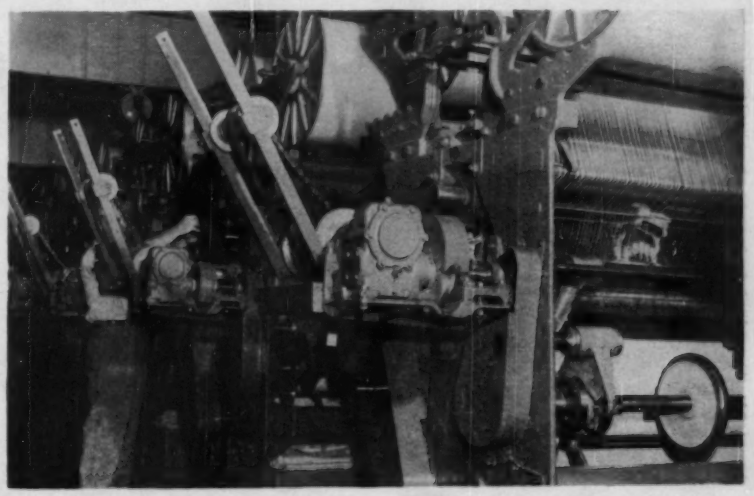
After inspection, most of the fabric goes to the sewing section, where the edges are sewed together on overedge machines. The knives have been removed from these machines; and the fabric is made into tubular form, which many cutters prefer.

Finishing is done at another plant where the fabric is calendered to the correct width on Tube-Tex equipment. Flat fabric is tentered. Some fabrics are now dyed for such end uses as women's sportswear.

Although still largely used in underwear, the end uses of thermal-knit fabrics are now extending to pajamas, sweaters, and sportswear. Some mills are making thermal-type fabrics on circular machines, but the original fabrics that meet U. S. Government specifications are made only on raschel machines such as those run at Domestic Lace.



WARPING is done at an average speed of 575 yds. per min. These 50-in. aluminum beams hold about 22,000 yds. of yarn, and 324 ends of yarn are warped.



RASCHEL MACHINES, 100 ins. wide, are used to knit thermal fabrics. The machines, which are 26 and 36 gauge, knit 20s, 22s, and 30s combed cotton yarn.

FABRIC EDGES are sewed together to make tubular fabric. The selvages are marked on the knitting machine to help the operator keep the courses level.

How Correct FILLING TENSION Is Controlled at the Shuttle

• The application of just the right amount of tension to filling as it leaves the shuttle in weaving is very important. The amount of tension applied can mean the difference between high and low production, first-quality cloth and seconds, and profit and loss.

• Here are some tips on the selection and use of various tensioning materials—

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

THERE IS GENERAL AGREEMENT that some form of tension should be applied to filling as it leaves the shuttle in weaving. Disagreement is about the method and material used to provide the tension.

The stop-and-go action of the shuttle will cause the filling to balloon, to over-run, or to slough off if some braking action is not provided. Hundreds of methods and combinations of methods have been tried to control the filling. That there is no one best tension device or material is shown by the fact that many different methods and materials are still in use after many years of research and experimentation.

In fact, it is not unusual to find loomfixers on adjoining sections of a mill using different methods to control the filling—and each getting good results.

Among the factors that should be considered in choosing a tensioning method or material are:

Type of fabric being woven
Kind of filling material
Filling yarn number
Amount of twist in filling yarn
Loom width and speed
Atmospheric conditions

INSPECTIONS and close follow-up are needed to maintain any kind of filling-tensioning material.

Tests Show Which Material Is Best

Too many mills base their choice of tensioning method and materials on personal preference, low cost, long life, ease of installation and maintenance, or other single factors. Each of these reasons for selecting the tensioning method and material should be considered, but there are also other equally important factors.

For instance, does the fur, bristles, loops, or tension eye do the job? That is, does it control the ballooning, sloughing off, and over-running of the filling? And does it do the job without causing broken picks, kinky filling, false stops, and other machine and fabric faults?

The only way to be sure that you have the best tensioning method and materials, used in the most effective and economical manner, is to conduct tests in your own mill. Anything as important as the tensioning of filling in the shuttles should not be left to guesswork or to the whims of loomfixers who can see only one side of the picture.

Keep a Record of All Factors

Take several blocks of looms—a dozen, a weaver's set, or even a loomfixer's section—and try different tensioning methods, materials, or kinds of installation. For instance, you may want to try fur in the shuttles of one block, a combination of fur and bristles in another, and nylon loops in a third.

Run a test for a month or more, preferably three months or the average life of your shuttles. Keep a record of everything: loom efficiency, seconds, first cost of tensioning material, labor cost of installation and maintenance, service life, effect on shuttles, and other things such as ease of threading the shuttle eye, effect on filling forks, and weaver and loomfixer reaction. Only by an analysis of all of these factors can a true diagnosis and choice be made.

You may find after completion of the tests that the material that costs the most, either for material, installation, maintenance, or for all three, is actually the cheapest to use when the other contributing factors are taken into consideration.

The savings of several dollars a year per loom for tensioning material can be quickly offset by even a slight increase in off-quality cloth or a decrease in loom efficiency.

Tension Eyes

Tension is applied to the filling in a number of ways as it passes through the shuttle eye. The most commonly

used device is tension pads. The pads are small, precision-made parallel steel plates actuated by tiny springs. The pads act as a brake to control the filling as it passes between them. The amount of tension applied to the yarn can be adjusted by compressing or releasing the spring by means of screws.

The tension pads are suitable for filament yarn but do not work well on spun yarn, especially cotton. Spun yarn may look smooth and uniform to the naked eye, but it is actually very uneven. The tiny variations and imperfections prevent the pads from exerting a constant and uniform tension to the yarn. The rapid movement of the pads as they follow the contour of the spun yarn wears the pads and springs quickly, and they need frequent replacement.

Some Yarns Are Easily Damaged

Some shuttle eyes are made with posts and bridges strategically placed to create drag to the filling as it passes over them. Pins in the shuttle eye often serve a double purpose: that of providing tension and of helping prevent the yarn coming unthreaded from the eye.

In some shuttle eyes, notably the old-type brass eye, a felt pad placed where the filling enters the eye imparts some drag. Several loops of wool yarn wrapped through the thread channel also form a filling tensioning device.

There are a number of mechanical tensions applicable to nonautomatic looms. These tensions are not practical for looms that have automatic filling-changing mechanisms. The use of tension eyes or mechanical tensions can result in damage to the yarn or fibers. Silk, rayon, and some man-made-fiber yarns can easily be damaged by incorrectly applied tension or by abrasive action.

Bristles

Formerly bristles were much used in the shuttles of cotton looms. They are still used in many mills, but usually in combination with fur or wool. Pig, horsehair, goat, or nylon bristles in bunches are placed in the shuttle walls to bear against the filling and give proper control and tension.

China pig bristles are best but are now unobtainable in this country in any quantity. Domestic pig bristles do not have the uniformity and resiliency of the China variety. Horsehair and goat bristles are used in limited amounts when heavy tension is not desired.

Nylon bristles can be obtained to more exact specifications than natural bristles, but the abrasive action of the yarn often causes the ends of the nylon bristles to fuse. The nylon bristles are also harder to attach firmly in the shuttle walls than the natural bristles.

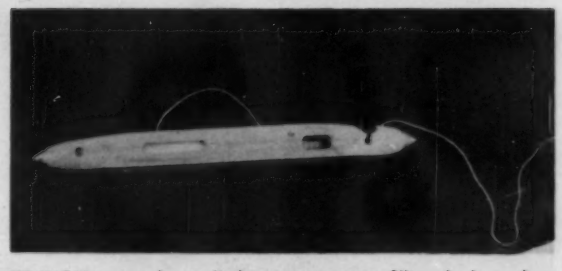
Bristles Can Be Used in the Eye

The most common application of bristles in the shuttle is to have one bunch of bristles in the front wall and one in the back wall. The bristles overlap the bobbin near its nose and control the yarn as it leaves the bobbin.

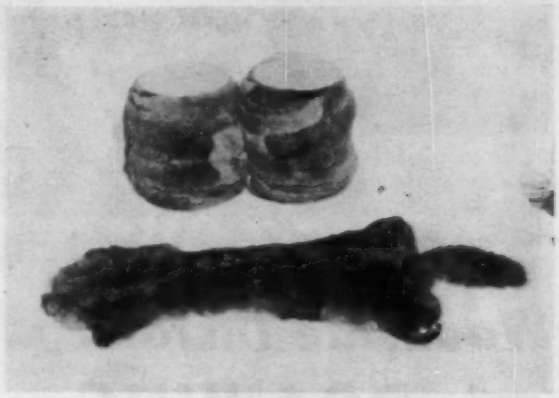
The number, size, and resiliency of the bristles used varies widely. A sheeting loom may require only a single bunch of soft bristles in the back wall of the shuttle; a duck or other heavy weave may need a dozen heavy bristles to control the filling.

Another application for bristles, not generally used, is that of placing them in the shuttle eye. A hole is drilled through the back of the shuttle directly opposite the eye. The bunch of bristles is inserted through the hole and eye and then clipped off flush with the front of the shuttle.

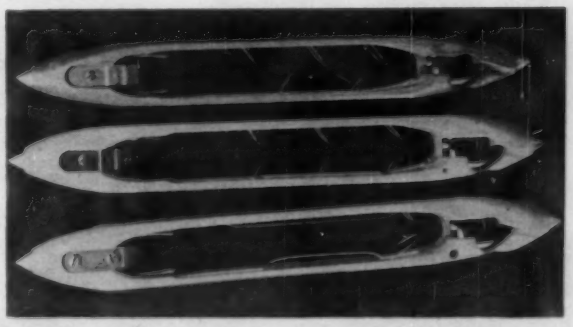
However used, bristles are attached by inserting them in holes drilled in the shuttle walls and then are pegged with soft wooden dowels or shoe pegs. Some loomfixers dip the pegs or the ends of the bristles in glue before inserting them.



TENSION, properly applied, prevents many filling faults such as kinking, looping, and sloughing.



OPOSSUM HIDE (foreground) is cut and sewed in strips (as shown on spools) for delivery to mills.



NYLON LOOPS can be applied to the shuttle in a number of ways to help control the filling.

Fur

Fur is widely used as a tensioning material for all types of filling. About 90% of the fur used in shuttles comes from the Australasian opossum. This animal has little resemblance to our native opossum; and its home is in Australia, Tasmania, and New Zealand.

Although about 300,000 opossum skins are imported into this country for shuttle fur each year, there is no danger of a shortage. This little marsupial is so prolific and plentiful that he is a nuisance, and a bounty is paid for his destruction in his native land.

CONTINUED ON PAGE 223

DRAWING FRAMES put 38 lbs. of sliver into 16x42 cans at 264 ft. per min. Frame efficiency is high.

CREELING is eight ends up from large cans. A 52-grain card sliver is made into a 55-grain drawing sliver.

Woodside Installs New DRAWING and ROVING

Woodside Mills, Greenville, S. C., recently installed high-production drawing and roving as part of an over-all modernization program. Results—

- **Cans hold 300% more sliver**
- **Drawing runs 264 ft. per min.**
- **Roving packages weigh 66 oz.**
- **Evenness is better in all departments**

NEW HIGH-SPEED, LARGE-PACKAGE DRAWING AND ROVING FEATURE CARD-ROOM IMPROVEMENTS recently made at Woodside Mills, Greenville, S. C. These changes are part of a multimillion-dollar modernization program now being completed.

After the opening and picking departments were consolidated and modernized [TEXTILE WORLD, Oct., '57, p. 122], the 274 cards in use were equipped with Saco-Lowell 18x42 coilers. A conveyor is being installed to make the handling of picker laps easier. Seven cards were equipped with roller doffers.

The cards produce a 52-grain sliver at 9 lbs. per hr. Cylinder runs 165 rpm., doffer 8 rpm., flats 2¾ ins. per min., and lickerin 427 rpm.

Waste standards for the cards are: vacuum strips 0.14%, card strips 0.16%, fly 0.04%, mixed waste 0.1%, and sweeps 0.0175%.

A daily waste report is made to the superintendent; and when the standards are exceeded by 25%, the figure is circled in red and called to the attention of the overseer for correction.

Careful attention is given to grinding and setting. Three card grinders per shift grind 27 cards every 24 hrs.; each card is ground about once every 10 days. Cards are ground approximately 3 hrs. each.

When a card is ground, the card grinder checks and adjusts all settings and makes a written report to the foreman. The condition of the clothing is indicated, and new parts that have listed on the report.

These Settings Are Used

The report further shows that the card is set as follows:

	Inches
Doffer to cylinder	0.007
Flats to cylinder	0.009
Lickerin to cylinder	0.007
Feed plate to lickerin	0.012
Doffer comb to doffer	0.029
Back screen	0.022
Bottom screen	1/8
Front screen	1/8
Top front plate	0.022
Bottom front plate	0.022
Top back plate	0.022
Bottom back plate	0.029
Lickerin screen	0.034
Top mote knives	0.012

ROVING FRAMES run 5 hrs. and 20 mins. between doffs. Front-roll speed is 134 rpm. for 1.15-hk. roving.

ROVING PACKAGES, which weigh 66 oz., are pushed in narrow trucks to the spinning room.

Bottom mote knives	0.010
Flat comb to plates	0.022

Drawing Runs 264 Ft. per Min.

Old drawing was replaced with 64 deliveries each of Versa-matic breaker and finisher drawing that runs 264 ft. per min.

The 52-grain card sliver is converted into a 55-grain sliver by the breaker drawing; a 55-grain sliver is produced at the finisher drawing. Variation of the finisher drawing is 16% on the Saco-Lowell tester and 8% on the Brush tester.

High standards of efficiency have been set for the new drawing frames. Standard interference is 5% for the breakers and 3% for the finishers. The standard for miscellaneous stops is 0.74 for the breakers and 0.29 for the finishers. Tests show that actual operations usually exceed these standards.

Large-Package Roving Is Made

Thirty-two Saco-Lowell FS-2 12x6½ roving frames were installed to make a 66-oz. bobbin of 1.15-hk. roving. Doffing interval is 5 hrs. and 20 mins.

Front-roll speed is 134 rpm., front-roll diameter 1⅛ ins., jack-shaft speed 310 rpm., spindle speed 695 rpm., twist multiplier 1.37, total draft 7.6, and break draft 1.66. Evenness is 20% on the Saco-Lowell tester. Standard hank efficiency is 91.9%.

Cleaning schedule for the roving frames is:

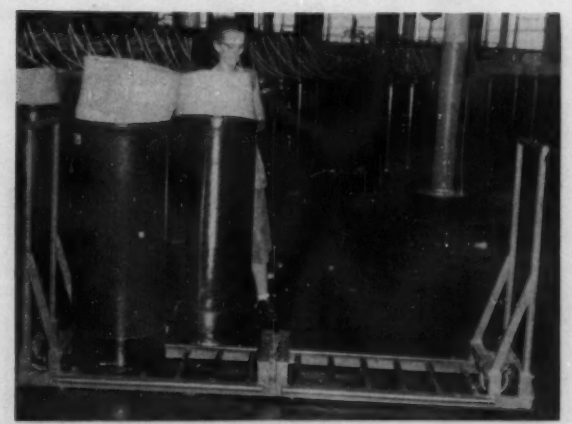
Each doff—Clean roll beam, pick flyers, top spindles, and top and bottom clearers. Wipe top carriage, heads, and shipper rods.

Daily—Pick spindles and top rolls, clean backs, gears, spindle tips, and bobbin gears.

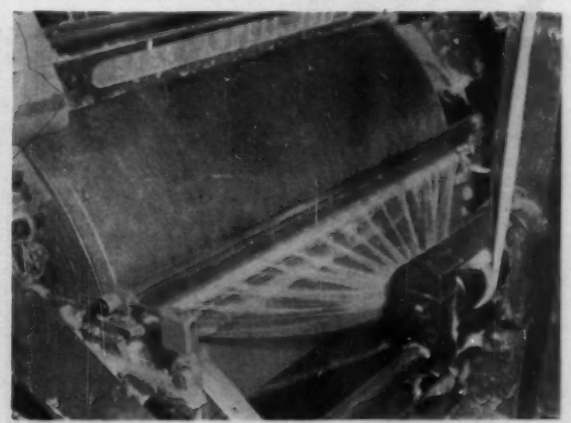
Three times weekly—Clean back clearers and top revolving clearers.

Weekly—Clean bobbin gears on 2¾ frames.

The large sliver cans used throughout the card room are transported to the various machines on special low-bed trucks built by the mill. Ball-bearing casters make it easy for the operators to move the trucks. Cans are never lifted from the floor; they are tilted a few inches and skidded onto the smooth truck bed. Narrow trucks are used for roving bobbins.



LARGE SLIVER CANS are transported between machines on a special mill-built truck with a low bed.



ROLLER DOFFERS were put on seven cards for experimental purposes. Cards run 9 lbs. per hr.

NORTHFIELD MILLS is a classic example of a small New England mill that continues to prosper under expert management backed by good merchandising.

How Northfield Mills Finishes HIGH-GRADE WOOLENS

Tucked in the mountains of central Vermont, Northfield Mills has made a success of manufacturing and finishing an unusually wide range of men's and women's wear made from wool or blends of wool and fur. The secret of its success lies in—

- **Good merchandising and styling**
- **Painstaking care in every process**

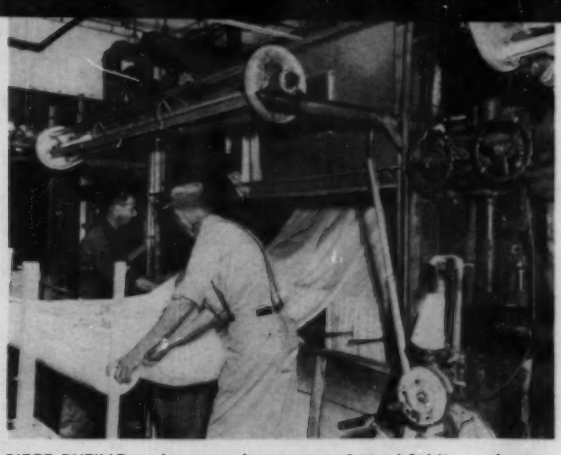
NORTHFIELD MILLS is proving that you can make money in the woolen business in New England—if you pick the right market, merchandise intelligently, and produce a superior product.

The mill specializes in fabrics made of blends of wool with cashmere, Angora fur, camel's hair, vicuna, nylon, and Orlon. There are also many styles made of 100% cashmere, camel's hair, or vicuna.

NAPPING is a slow and painstaking business at Northfield. Double-action nappers are used to raise the nap very slowly.

BRUSHING face-finished fabrics sets the nap in one direction. Action is provided by nylon bristles engaging the fabric.

FRANK BUSSIERE, manager, and Ernest Adams, superintendent, look at a piece of fabric that requires a little extra attention.



PIECE DYEING makes up a large part of Northfield's production. Modern equipment helps the plant maintain high quality.

The plant's production is very diversified; its 32 looms may often be weaving as many styles. Current production is based on 22 styles of fabric for which yarn is carded and spun at the mill and 13 styles made from stock-dyed yarns spun outside.

The styles can be broadly classified into three major groups—face-finished fabrics, tweed types, and those with a closely sheared napped surface that resembles a suede or plush fabric. Northfield's face-finished fabrics and the plush types are generally made up of blends of wool with the more expensive cashmere, fur, vicuna, or camel's hair. The highest-priced style is a women's coating material made of 100% vicuna that goes to the cutter at around $50 per yd.

Quality consciousness has to be second nature to the people handling fabrics in this price range and Northfield's manager, Frank H. Bussiere, says proudly, "We haven't had any seconds on our 100% vicuna fabrics. We think that is partly because of our stable employment of skilled people. We haven't run on short time for 10 years, and we keep 165 to 170 employees busy all the time."

Finishing Starts With Burling

Burling and mending goods off the loom is really a finishing step because in this operation many mechanical defects in the fabric are repaired. Loose ends from knots are snipped off, and breaks are skilfully rewoven so that they are invisible in the finished goods.

From burling and mending, Northfield's piece-dyed fabrics next go to the fulling operation, where they are saturated in a mild soap solution and fulled until the desired shrinkage in warp and filling has occurred.

The goods are taken from the fulling mill and scoured in a dolly washer to remove wool grease and dirt; then they are extracted, opened, and rolled up in preparation for carbonizing.

The carbonizing operation is done in a modern range consisting of lead-lined treating tanks supplied with squeeze rolls at the delivery end and a roller-type dryer equipped with automatic temperature controls. The goods are carbonized in a 4% solution of sulfuric acid and dried at 250 to 260° F.

After the goods are carbonized, they are washed in a dolly washer to remove excess acid and the products of carbonization. The fabric is then extracted, opened, and plaited onto flat trucks for the wet-napping operation.

Napping Is a Critical Step

Northfield naps a variety of fabrics, and there is considerable variation in the length of nap and the techniques employed in obtaining the desired effect.

Face-finished fabrics, of which zibelines may be taken as a class, are run through the napper while they are wet. The number of runs depends on the particular fabric, but to tease the nap gradually, many runs at low energy are preferred to a few runs at high energy. Some of Northfield's styles may require 18 to 20 runs to produce a suitable nap.

When the nap is right, the goods go to a double-cylinder brushing machine. Nylon bristles set in the cylinders brush the nap in one direction and polish the animal-fur content. The cylinder-surface speed is several thousand feet per minute; so the action is swift and positive.

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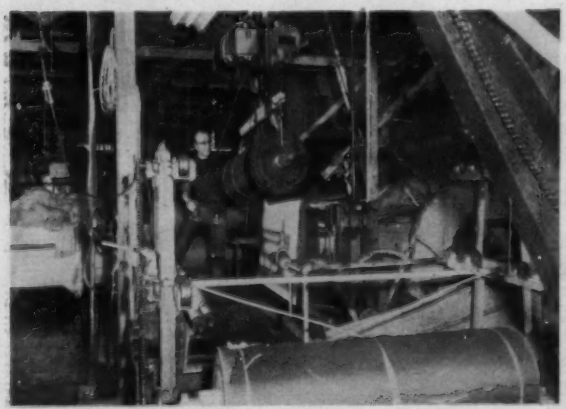


BOILING the napped fabric on perforated centers completes the setting of the nap after it has been brushed.

SHEARING, the final step in finishing, may require up to 20 runs to produce the exact effect desired on some styles.

GRAY GOODS made of a rayon-Orlon blend are given a thorough burling, mending, and inspection before dyeing.

BLANKETS are dyed in 70-yd. lengths in these stainless-steel becks. Heavy hobs on the reels prevent slippage of the fabric.

How Chatham Finishes A Popular Line of BLANKETS

Chatham Mfg. Co., Elkin, N. C., makes over 900 styles and types of blankets, along with automotive and apparel fabrics. One of its most successful lines is a rayon-Orlon blend marketed as the Purrey blanket. A high-quality product is assured by—

- **Adhering to wool-blanket standards of manufacture and inspection**
- **Using care in the dyeing and finishing operations**

CHATHAM MFG. CO. produces well over 1-million blankets a year that carry the Purrey trademark.

To sell this quantity of a rayon-Orlon-blend blanket in a market once dominated by wool, Chatham has combined designing skill and general blanket-manufacturing know-how with painstaking finishing methods. Except for fulling and scouring, the man-made-fiber-blend fabrics get the full wool-blanket treatment.

The base fabric for the Purrey blanket in the winter weight is woven with 38 ends of a 14s single rayon-Orlon yarn, with 35 picks of a 2½ cotton count, or 7-cut yarn of the rayon-Orlon blend. The rayon accounts for 85% of the blend and the Orlon for 15%. The mixture provides strength, resiliency, and a minimum of complications in dyeing.

The summer-weight blankets are based on warps of 38 ends of 14s single rayon-Orlon yarn, with a 21-pick filling of 3.8s rayon-Orlon yarn. The blankets finish at a weight of 3¼ lbs. and 1.94 lbs. respectively in the 72x90-in. size.

Gray Inspection Comes First

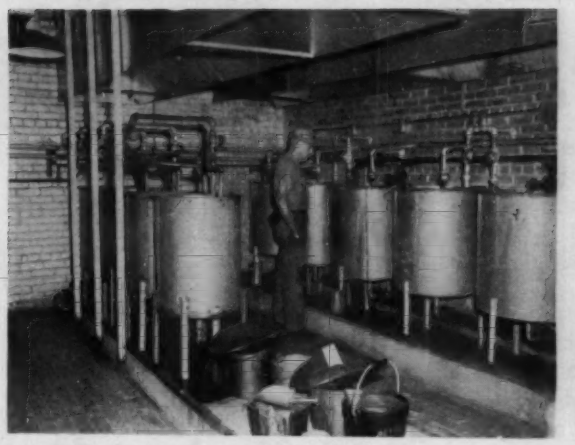
Before the blankets are dyed, they are given a thorough inspection over a burling perch. Small imperfections are mended, spots are removed, and the cut is graded into firsts or seconds. Each cut runs to about 70 yds.

Blankets are assembled into lots by style after inspection; and from the assembly area, dye lots are made up according to orders received.

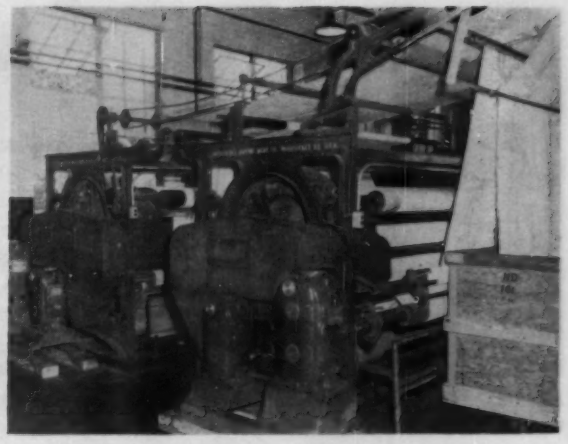
The first step in the dyeing operation is a very thorough scour. A high percentage of blankets are dyed pastel shades, and very few blanket shades would be classed darker than medium; so a good, clean foundation is necessary.

Chatham scours in a bath containing ammonia, a synthetic detergent, tetrasodium pyrophosphate, and a solvent. Usually, an hour's run at 160 to 180° F. is enough to insure a good bottom for dyeing.

Dyeing routines vary slightly with the dyes used and the shade requirements. For rayon-Orlon blankets, Chatham relies on lightfast direct colors to produce light shades. For medium and dark shades, aftertreated direct dyes are used to give improved washfastness.



COLOR SHOP setup centralizes all dye and chemical preparation. Color is delivered to each machine by gravity.



MODERNIZED WOONSOCKET NAPPERS produce up to 35 yds. per min. with new PIV drives that replace cone pulleys.

After the scour is completed, the bath is flooded over the top of the becks until it has cooled to 80 to 100° F. The liquor is dropped to the proper level to give a bath ratio of 12 to 1, and the dissolved color and whatever assistants are needed are run into the beck. Color and chemicals are supplied to the becks by gravity from a central station through stainless-steel pipes.

The temperature is raised to the boil in 60 mins., and salt is added as necessary. Chatham uses a saturated brine for this purpose. No set period for adding salt is observed; the shade and the dyestuff involved control this factor. Some shades are started with salt as a part of the initial bath; but generally, salting starts after the bath has been at temperature for 15 to 30 mins.

When the shade is matched, the bath is cooled by flooding and dropped to the unloading level. The lots are then unloaded, put through a scutcher, squeezed out, and dried on a pin tenter.

Inspect Before Napping

A second inspection is given the dyed goods before they are sent to the napping department. At this point, the fabric is closely checked for shade, level dyeing, and any defects that may have occurred in processing. It is important to get any wet refinishing done before the blankets are napped.

A very successful item has been a line of screen-printed blankets. The blankets are scoured, bleached, or dyed at the Elkin plant and are sent to a screen-printing plant for printing.

When the printed blankets are returned to Elkin, they are washed, dried, and inspected before napping.

How Napping Is Done

Chatham gives the Purrey blanket an initial breaking run through a single-action napper. In this type of napper, the wire clothing on the worker rolls is set at the same angle on each roll.

The second run is on a double-action napper. The wire clothing on this machine is applied to the worker rolls so that the angle of the wire is reversed on alternate rolls.

The balance of the napping is done on double-action machines and generally requires four to five runs per side to develop a satisfactory nap. A final felting run is given to tuck in long fibers and even out the surface. Chatham uses both Gessner and Woonsocket nappers and has a total of 38 cylinders in operation.

The finished goods are given a final

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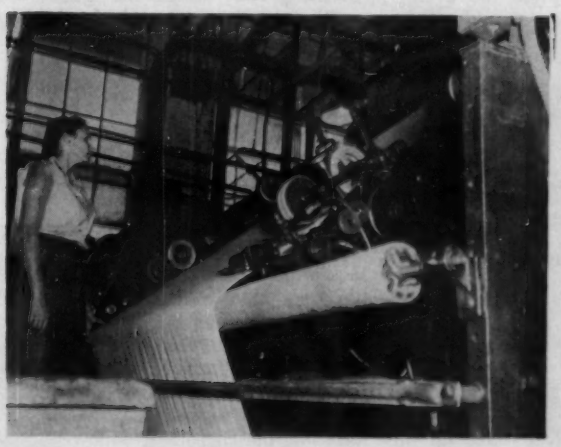

AUTOMATIC FEEDERS on the pin tenters used for drying blankets cut down misclips and keep pins on the selvage area.

BLANKET BINDINGS are produced from a roll of binding fabric fed through a forming guide on the sewing machine.

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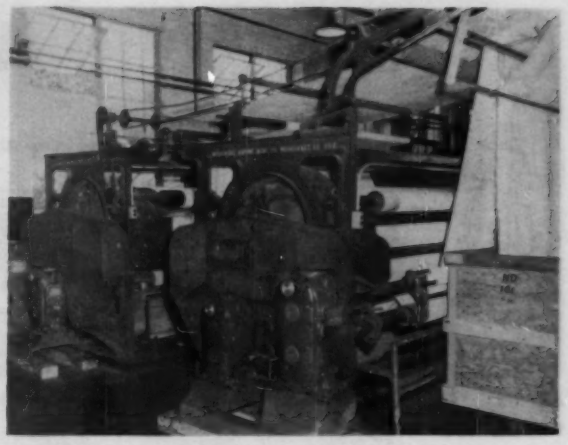
The first step in the dyeing operation is a very thorough scour. A high percentage of blankets are dyed pastel shades, and very few blanket shades would be classed darker than medium; so a good, clean foundation is necessary.

Chatham scours in a bath containing ammonia, a synthetic detergent, tetrasodium pyrophosphate, and a solvent. Usually, an hour's run at 160 to 180° F. is enough to insure a good bottom for dyeing.

Dyeing routines vary slightly with the dyes used and the shade requirements. For rayon-Orlon blankets, Chatham relies on lightfast direct colors to produce light shades. For medium and dark shades, aftertreated direct dyes are used to give improved washfastness.

COLOR SHOP setup centralizes all dye and chemical preparation. Color is delivered to each machine by gravity.



MODERNIZED WOONSOCKET NAPPERS produce up to 35 yds. per min. with new PIV drives that replace cone pulleys.

After the scour is completed, the bath is flooded over the top of the becks until it has cooled to 80 to 100° F. The liquor is dropped to the proper level to give a bath ratio of 12 to 1, and the dissolved color and whatever assistants are needed are run into the beck. Color and chemicals are supplied to the becks by gravity from a central station through stainless-steel pipes.

The temperature is raised to the boil in 60 mins., and salt is added as necessary. Chatham uses a saturated brine for this purpose. No set period for adding salt is observed; the shade and the dyestuff involved control this factor. Some shades are started with salt as a part of the initial bath; but generally, salting starts after the bath has been at temperature for 15 to 30 mins.

When the shade is matched, the bath is cooled by flooding and dropped to the unloading level. The lots are then unloaded, put through a scutcher, squeezed out, and dried on a pin tenter.

Inspect Before Napping

A second inspection is given the dyed goods before they are sent to the napping department. At this point, the fabric is closely checked for shade, level dyeing, and any defects that may have occurred in processing. It is important to get any wet refinishing done before the blankets are napped.

A very successful item has been a line of screen-printed blankets. The blankets are scoured, bleached, or dyed at the Elkin plant and are sent to a screen-printing plant for printing.

When the printed blankets are returned to Elkin, they are washed, dried, and inspected before napping.

How Napping Is Done

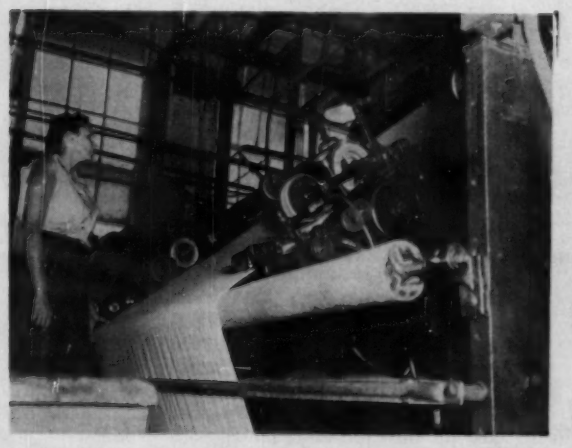
Chatham gives the Purrey blanket an initial breaking run through a single-action napper. In this type of napper, the wire clothing on the worker rolls is set at the same angle on each roll.

The second run is on a double-action napper. The wire clothing on this machine is applied to the worker rolls so that the angle of the wire is reversed on alternate rolls.

The balance of the napping is done on double-action machines and generally requires four to five runs per side to develop a satisfactory nap. A final felting run is given to tuck in long fibers and even out the surface. Chatham uses both Gessner and Woonsocket nappers and has a total of 38 cylinders in operation.

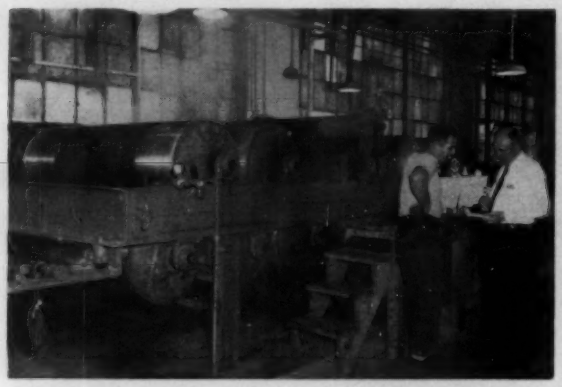
The finished goods are given a final

CONTINUED ON PAGE 210

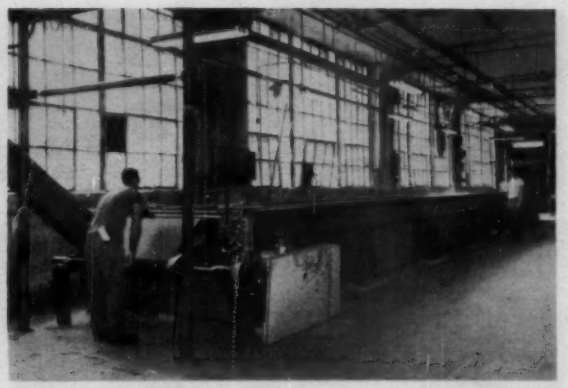


AUTOMATIC FEEDERS on the pin tenters used for drying blankets cut down misclips and keep pins on the selvage area.

BLANKET BINDINGS are produced from a roll of binding fabric fed through a forming guide on the sewing machine.



ARTHUR ZELLER, superintendent, (right) talks with Bill Dube at the stack of cans fitted up with a finishing pad.



GAS-FIRED TENTER is used for final drying or for steaming dried goods out to width.

Streamlining Cuts COSTS At Watuppa Finishing Co.

Originally set up to finish corduroys, Watuppa Finishing Co., Fall River, Mass., has branched out into other lines. The plant has worked out simple routines for shoe failles and seat-cover trim that—

- **Produce excellent results**
- **Keep operating costs low**

BY STREAMLINING PROCESSING, Watuppa Finishing Co. has been able to cut costs in finishing low-end rayon fabrics and cotton-filled shoe failles.

The seat-cover materials are made of 200-den. yarn in a 58x38 count, and other styles include 300-den. 48x42 and 300-den. 80x36 plain-woven fabrics.

Customer requirements include good solid dyeings free of streaks and a nonslip finish that is fairly stiff.

Watuppa checks each lot for the type of sizing used on the warp and desizes lots that require starch removal. Rolls of approximately 1,000 yds. are put through a Rapidase solution and let stand 4 to 6 hrs. and are then given a light scour on jigs.

Base Color Is Padded On

The scoured goods are dried on cans and put through a dye pad in a formula calculated to produce 75 to 80% of the final shade required. The result is not a true dyeing but serves to saturate the goods with color in excess of what can actually be absorbed in a short time.

The padded fabric is then taken to the jigs to complete the dyeing. The goods are run down cold. Then the temperature is raised to the maximum suited to the direct colors involved, and the goods are run until the surplus color has been absorbed. The shade is then checked; and if further dye or salt is indicated, the addition is made and dyeing proceeds to completion.

One Run Dries and Finishes

The dyed goods are dried on a set of horizontal cans upon which is mounted a finishing pad at the halfway point.

By the time the goods have passed over half the stack of cans, they are nearly dry and ready to take up the finishing material in the pad box. After passing through the finishing pad, the goods are led onto the balance of the cans and drying is completed.

A final run through a gas-fired tenter equipped with steam jets at the entering end brings the goods to width, and they are ready for tubing and inspection.

Shoe Failles Are Bleached

The shoe failles handled by Watuppa range from 92x32 carded cotton filling to 128x40 combed-cotton-filled fabrics with bright-rayon warps.

These goods are desized by padding in Rapidase and letting them stand 4 to 6 hrs. Then they are scoured on the jigs with a detergent built up with a mild alkali.

The goods are then given an oxalic-acid wash to remove traces of iron that might be present. This step is a precaution against damage in the peroxide bleach bath to follow.

Watuppa bleaches shoe failles be-

CONTINUED ON PAGE 220

Tips on Wet Processing
METALLIC-YARN FABRICS

Processing fabrics that contain metallic yarns is not difficult if the dyer or finisher—

1. Knows the type of metallic yarn with which he is working

2. Uses moderation in time, temperature, pH, and pressures in his processing

3. Follows the manufacturer's recommendations or makes laboratory trials when in doubt

This article and the condensed information in the Metallic-Yarn Wet-Processing Guide on pages 133 and 134 will give the dyer and finisher basic information on handling metallic-yarn fabrics

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

EARLY TYPES OF METALLIC YARNS had limited resistance to wet processing, but today's products are much more workable.

Improved protective films and better laminating adhesives are responsible for the increased resistance to processing of modern metallic yarns.

However, the dyer and finisher must still consider that all metallic yarns are essentially sandwiches made up of a protective film laminated to aluminum foil or to a film that has been aluminized by a vacuum process.

Usually, the sandwich is made up of a layer of film, a layer of foil, and another layer of film; but in some types there is only one layer of clear film laminated to a layer of aluminized film. A third variation is made of film, aluminized film, and film in a three-layer sandwich.

The weakness in any metallic yarn lies in the exposed edges formed when the sheet film is slit into the narrow widths represented by the commercial yarns. It is at these exposed surfaces that chemical solutions most readily creep in to attack the aluminum, disrupt the bond, and affect any added coloring matter that may be present.

With six major types of metallic yarns on the market, the dyer should make every attempt to identify the yarn he is about to process because there are fairly wide variations in the processing resistance of the various types.

Tests outlined in the Metallic-Yarn Wet-Processing Guide will identify the principal types of metallic yarns now in use. It is important to separate foil-bearing yarns from metallized polyester-bearing yarns because the latter are somewhat less resistant to etching by acids and alkalis.

Moderation Is Keynote

Once the dyer or finisher knows the type of yarn he has to work with, half the battle is won; he can go ahead with handling the fabric to preserve the luster and decorative effect of the metallic yarns.

With the exception of some yarns made with viscose exterior surfaces, all metallic yarns will stand considerable working in the usual dyeing and finishing steps; and the polyester-film types are superior in this respect to others now in commercial use.

But the dyer will run into trouble if he attempts to boil any metallic yarns in highly acid or alkaline solutions for extended periods of time. Metallic-yarn manufacturers have worked out acceptable procedures for handling their products, and their recommendations should be followed in case of doubt.

For example, fabrics containing metallic yarns can be mercerized if the metallic yarn is of the right type; but otherwise mercerizing is a risky proposition. Two risk factors are involved: (1) possible saponification of the protective film when it is made of acetate or butyrate acetate or (2) etching away of the aluminum when it is present as a micro-thin film deposited by vacuum on a polyester base.

For these reasons, the metallic yarns least susceptible to damage from normal mercerizing are made up of polyester film and aluminum foil. Even with the right metallic yarn, all caustic should be removed from the goods promptly or the metal may be etched.

Bleaching

Bleaching routines for fabrics containing metallic yarns depend again on the type of yarn present. Butyrate-acetate and triacetate films are generally resistant to bleaching, but caustic content in the formulations should be kept low to avoid saponification. Polyester films are resistant to caustic, but the aluminum content of any type of metallic yarn may be etched by strongly alkaline solutions as well as by strong acids; so here again time, temperature, and controlled pH are essential.

Cotton and Rayon

A suggested bleaching routine for cotton or rayon fabrics containinng metallic yarns is:

Wet out the fabric for 2 mins. at 170° F. in a liquor containing:

2 grams per liter trisodium phosphate

3 grams per liter Alkanol HCS

Wash at 140° F.; then saturate at 100° F. in.:

10 grams per liter sodium tripolyphosphate

Portions of the technical information contained in these pages were selected from data released by The Dobeckmun Co., Metlon Corp., Multitex Products Corp., and E. I. du Pont de Nemours & Co., Inc.

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10 grams per liter sodium tripolyphosphate

Portions of the technical information contained in these pages were selected from data released by The Dobeckmun Co., Metlon Corp., Multitex Products Corp., and E. I. du Pont de Nemours & Co., Inc.

5 grams per liter borax
1.0 gram per liter Epsom salts
1.5 grams per liter Perma-Kleer 80
30.0 grams per liter Albone 35

Express to 100% pickup and steam for 1 hr. at 205° F.; rinse and dry.

Rayon

A typical bleach for rayon goods is:

3% Textone owg.
1% oxalic acid owg.

Raise the bath to the boil and run for 1 hr. and rinse. Butyrate-acetate films may blush because of the high temperature but will return to normal if they are heated to 300° F. for 3 mins.

Wool

A nonsilicate bleach satisfactory for woolen goods carrying metallic yarns is:

21.8 lbs. per 100 gals. peroxide 35%
2.5 lbs. per 100 gals. tetrasodium pyrophosphate
1.0 lb. per 100 gals. ammonium hydroxide

Raise to 125° and maintain for 2 hrs. Rinse well in warm and then in cold running water.

Where it is necessary to use peracetic acid to obtain good whites, try:

1.6 lbs. per 100 gals. peracetic acid 40%
0.5 lbs. per 100 gals. hexametaphosphate
0.6 lbs per 100 gals. sodium hydroxide

Raise temperature to 180° F. and run 2 hrs.; rinse in warm and then in cold running water.

Sodium hypochlorite bleaching by usual formulations can be carried out on fabrics that contain metallic yarns normally resistant to wet processing.

Dyeing

Dyeing routines for fabrics containing metallic yarns need not be very different from those established for all-fiber fabrics. Metallic yarns now appear in almost every imaginable class of goods, and the purchaser demands the same fastness properties in the metallic-yarn-decorated goods as in plain fabrics.

Any usual dyeing routine is practical on fabrics containing metallic yarns if some care is used in the selection of dyes and assistants. Roughly, butyrate acetate can be expected to behave like acetate yarns and is thus subject to saponification by strong alkalis, or dyeing with disperse colors. The polyester films will not saponify but will also be stained by disperse dyes in medium to dark shades.

Many light shades can be produced on acetate or nylon fabrics carrying metallic yarns by selecting disperse dyestuffs that reserve both the butyrate-acetate and polyester films.

Other classes of dyes can be applied by their usual application methods, as long as care is taken to avoid long boiling periods and/or very high or very low bath pH. Some suggested routines follow.

Vat Dyeing

The caustic present in vat-dyeing formulas tends to etch metallized-film types of metallic yarn, and these yarns should not be exposed to vat-dyeing conditions. However, foil-bearing types of metallic yarns can be successfully dyed by all accepted methods.

Jig applications of vat dyes may be based on:

0.5% owg. Turkey Red Oil
7.5% owg. caustic soda
7.5% owg. hydro
10.0 to 25.0% owg. common salt, depending on dyestuff

The goods are dyed for 45 mins. at 120° F., reduced at 140° F., oxidized in air, and rinsed.

The pad-steam method is also applicable. Pigment is applied in the first pad; then the goods go into the chemical pad, which is charged with:

4 to 8 oz. per gal. caustic soda
4 to 8 oz. per gal. hydro

The goods are steamed at 220° F. for 15 to 20 secs., oxidized as usual, and rinsed.

Leuco-vat esters present no problems; and naphthol colors, if properly selected, reserve the film on most metallic yarns.

Direct Dyes

Direct colors are easily applied under normal conditions, but it is wise to check the dyes for staining and then to choose dyes that exhaust well at 170 to 180° F.

Sulfur Dyes

Sulfur dyes and dyeing methods that require over 5% sodium sulfide in the bath may cause etching of metallized-foil types; but good results can be obtained with selected sulfur dyes worked at 170 to 180° F. for 1 hr., followed by rinsing, oxidizing with acetic acid, and a final rinsing.

Finishing

Woolen fabrics undergo more wet-finishing steps than any other type of goods, but suitable metallic yarns properly processed will not be harmed.

Metallic yarns are resistant to the usual fulling, carbonizing, and scouring operations if the following points are kept in mind:

1. Detergents should be neutral or nearly neutral
2. Cresylic-acid-base penetrants should be avoided if butyrate-acetate types of metallic yarn are present
3. Keep pressure off nip rolls in rope-scouring operations; maintain a ¼ to ¾ gap between nip rolls if butyrate-acetate film is present.
4. Tack fabrics to avoid scouring streaks

A typical scour formula is:

9 gals. neutral soap (4 oz. per gal.)
9 gals. soda ash (2 oz. per gal.)
1 gal. triethanolamine
Make up to 300 gals.

A point to remember in handling woolens carrying metallic yarns is that wool oils with a high free-fatty-acid content may delaminate metallic yarns if the raw goods are stored for long periods before scouring and finishing.

Good Design Helps Finishing

Fabrics that have long floats of metallic yarns or those that shrink excessively warpwise when wet are apt to give the finisher and dyer trouble. Goods that are expected to shrink lengthwise in processing should be designed to carry metallic yarns in the filling, where shrinkage is more easily controlled.

If long floats are necessary to design, the dyer can minimize breaking by tacking the fabric so that the floats are folded on the inside.

Excessive shrinking during processing has to be watched because metallic yarns are dimensionally stable and will present a loose and crinkled appearance in fabrics that have shrunk.

The latest development in metallic yarns is a staple-fiber type. The protective film is a polyester, and the product can be handled in the dyehouse similarly to filament-type metallic yarns.

Colored metallic yarns should be carefully checked in the laboratory before severe processing because the pigments and lakes used in producing the colors may be affected by processing more severely than are the gold and silver types of metallic yarns.

METALLIC-YARN WET-

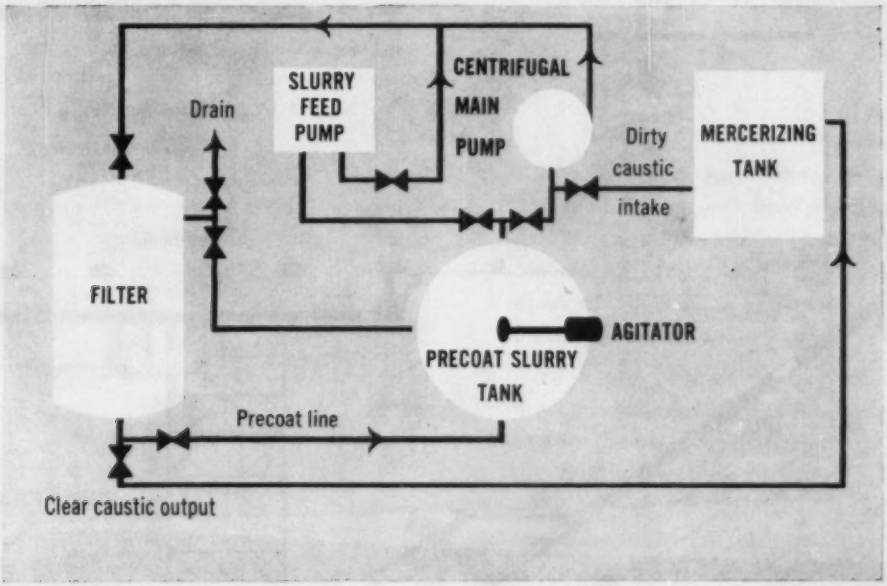
(Gold and Sil

CONSTRUCTION OF PRINCIPAL TYPES OF METALLIC YARNS	How To Identify	Major Fabric			
		Singe Desize	Scouring	Bleaching	Mercerizing
Viscose + Metal Foil + Viscose	Burn — smells like paper. Immerse in water—may delaminate. Not soluble in acetone.	May be singed. Avoid desizing if possible—may delaminate.	Avoid.	Avoid.	Avoid.
Acetate-Butyrate + Metal Foil + Acetate-Butyrate	Burn — smells like rancid butter. Soluble in acetone, isopropyl acetate.	May be singed or desized by usual methods.	May be scoured with mild alkalis and detergents in jigs or becks at 160 to 180° F. Avoid cresylic-acid compounds, caustic soda, heavy nips.	Use low-caustic or silica-free peroxide formulas in one-stage continuous systems; open kiers, jigs, becks satisfactory with low-alkali peroxide formulas.	May saponify f Make trial runs.
Triacetate + Metal Foil + Triacetate	Acetone dissolves film in 30 mins. May delaminate in benzene, methyl alcohol, trichlorethylene.	May be singed or desized by usual methods.	May be scoured with mild alkalis and detergents in jigs or becks at 160 to 180° F. Avoid caustic soda, heavy nips, high tension.	Use low-caustic or silica-free peroxide formulas in one-stage continuous systems. Open kiers, jigs, becks satisfactory with low-alkali peroxide formulas. Chlorine, chlorite, and peracetic-acid bleaches satisfactory under controlled conditions.	May saponify f Make trial runs.
Polyester + Metal Foil + Polyester	Yarn will stretch 100 to 120%. Acetone, benzene, chloroform, trichlorethylene delaminate. Gold yarns may lose color.	May be singed or desized by usual methods.	May be scoured with mild alkalis, detergents, in jigs or becks at 160 to 180° F. Avoid caustic soda, heavy nips, excess tension.	Modified two-stage caustic-steam and peroxide-steam system workable; also single-stage methods. Jigs, becks, open kiers can be used with peroxide formulas. Chlorine, chlorite, and peracetic-acid bleaches satisfactory under controlled conditions.	Satisfactory unde to 40 secs. expo to caustic. W thoroughly.
Polyester + Metallized Polyester + Polyester	Yarn will stretch 100 to 120%. Acetone, chloroform, trichlorethylene may delaminate.	May be singed or desized by usual methods.	May be scoured with mild alkalis and detergents on jigs or becks at 160 to 180° F. Avoid caustic soda, heavy nips, excess tension.	Avoid caustic soda in peroxide formulas; do not use two-stage process. Jigs, becks, open kiers satisfactory. Chlorine, chlorite, and peracetic-acid bleaches are suitable under controlled conditions.	Not recommend may etch metal
Polyester + Metallized Polyester	Yarn will stretch 100 to 120%. Acetone, benzene, chloroform, trichlorethylene may delaminate.	May be singed or desized by usual methods.	May be scoured with mild alkalis and detergents on jigs or becks at 160 to 180° F. Avoid caustic soda, prolonged scouring, heavy nips.	Avoid caustic soda in peroxide formulas. Do not use two-stage process; jigs, becks, open kiers may be used. Chlorine, chlorite, and peracetic-acid bleaches satisfactory under controlled conditions.	Not recommend may etch metal

ET-PROCESSING GUIDE

l Silver Types)

r Fabric-Processing Steps				General Comments
rcerizing	Dyeing	Drying	Finishing	
Avoid.	Fabrics containing these metallic yarns may be pad-dyed. Avoid prolonged exposure to dye liquors, such as jig or beck processes. Select colors to avoid staining viscose film.	Usual drying machines and temperatures applicable. Avoid excess tension, overdrying, stoppages.	Light cold calendering, decatizing, shrinking are feasible. Fabric design may affect results. Usual plain or water-repellent finishes may be applied in pad, or resins not requiring afterwash.	This type of metallic yarn is best suited to loom-finished fabrics or fabrics requiring a minimum of wet processing. The yarns are generally resistant to dry cleaning.
aponify film. ial runs.	Fabrics containing these yarns may be dyed with direct, developed, acid, chrome, vat, leuco-vat esters, naphthol, and sulfur colors or with selected disperse colors at 120° F. Optimum pH 6 to 8. Suggested temperature 160 to 180° F. Avoid prolonged boiling or excess acidity or alkalinity.	All drying methods are applicable. Moderate tensions and pressures are preferred. Avoid stoppages, overdrying.	All finishing steps normal to fabric are possible. Fabric design determines final effect in some cases. Usual plain, water-repellent, or resin finishes are suitable. Cold calendering satisfactory.	This metallic yarn withstands most wet-processing steps and dyeing procedures. In dyeing acetate fabrics, choose dyes applicable at 120° F. or film may stain. All processing involving boiling, acids, or strong alkalis should be watched carefully to avoid etching, saponification, blushing, or delamination. The yarn is fast to normal laundering and dry cleaning.
aponify film. ial runs.	Fabrics containing these yarns are dyeable by same procedures used for the butyrate-acetate yarns. Avoid excess caustic, prolonged boiling.	All drying methods are applicable, to temperatures of 330° F. Moderate tensions and pressures are preferred. Avoid stoppages, overdrying.	All finishing steps normal to fabric are possible. Fabric design may limit shrinkage, other operations. Usual plain, water-repellent, or resin finishes suitable. Cold calendering satisfactory.	This metallic yarn behaves like Arnel as regards dyes. The yarn has low stretch and is more resistant to blushing in high wet heat than the butyrate-acetate type. Can be heated to 275° F. dry heat, higher for limited cycles. The yarn is fast to normal laundering and dry cleaning.
tory under 30 cs. exposure tic. Wash hly.	Direct, developed, acid, chrome, vat, leuco-vat esters, naphthol or sulfur dyes are applicable; disperse dyes at 120° F. Avoid excess alkalinity. This type of metallized yarn is generally more resistant to processing than any other.	Can be dried on usual machinery at up to 330° F. Avoid excess tension and pressures, stoppages, and overdrying.	All finishing steps normal to fabric are possible. Fabric design may limit shrinkage, other operations. Usual plain, water-repellent, or resin finishes suitable. Cold calendering satisfactory.	Tough, high-stretch film with excellent chemical resistance permits more latitude in processing. Film dyes like Dacron. The yarn is sensitive to pressure combined with dry heat over 300° F. Film will not saponify with caustic, but etching of metal can occur if exposed to alkalis or acids at elevated temperature for long periods. Fast to normal laundering and dry cleaning.
commended; h metal	Most dyes suitable for polyester-film type are applicable. Care should be exercised in use of caustic, copper, mineral acids. This type etches more readily than foil-bearing types.	Can be dried on all usual machines at up to 330° F. Avoid excess tensions and pressures, overdrying, and stoppages.	All finishing steps normal to fabric are possible. Fabric design may limit shrinkage, other operations. Usual plain, water-repellent, or resin finishes suitable. Will stand embossing, Schreinering, cold calendering.	Tough-film yarn that may be processed generally under same conditions suitable for foil-bearing type above. Because of extremely thin metallic layer, yarn is more sensitive to strong acids, alkalis, and combined heat and pressure.
ommended; h metal	Dyes suitable for polyester-film types are applicable. Avoid excess caustic or mineral acids or prolonged boiling.	Usual drying methods are applicable to 330° F. Avoid excess tensions and pressures, overdrying, and stoppages.	All finishing steps normal to fabric are possible. Fabric design may limit shrinkage, other operations. Usual plain, water-repellent, and resin finishes suitable. Will stand hot or cold calendering, Schreinering.	This yarn is light and very soft. Chemical resistance is generally excellent, but metallic layer is very thin and more easily etched than foil-bearing type. Avoid continued pressure and heat above 275° F. The yarn is fast to normal laundering and dry cleaning.



MERCERIZER CAUSTIC is filtered continuously in this system. To start, the filter plates are first given a light coating of Nerofil supplied from the precoat slurry tank. Then mercerizer caustic is put through the filter continuously. Small amounts of filtering aid are added to the dirty caustic by the slurry feed pump.

How One Mill Clarifies MERCERIZING CAUSTIC

One of the large yarn-mercerizing plants clarifies its caustic liquors through a pressure-filter system activated by a small amount of a carbonaceous material insensitive to strong alkalis. The clarification system provides—

- **Clean caustic free of suspended matter**
- **Greater savings over older methods previously used**

CLARIFYING MERCERIZER CAUSTIC is now a simple and inexpensive operation at one of the larger yarn-mercerizing plants.

The removal of suspended matter from 52° Tw. caustic circulated in a mercerizing system presents several problems.

Conventional equipment for removing suspended matter usually includes settling tanks, coal-bed filters, centrifuges, coagulating treatments, or combinations of these steps.

All of these methods consume caustic in backwashing operations or require excess storage space. There is also caustic loss in removing sludge from settling tanks and pipe lines.

A more satisfactory method has been worked out at this plant, based on pressure filtration aided by Nerofil, made by Great Lakes Carbon Corp.

How the New System Works

The filter has 180 sq. ft. of filtering surface, and the filtering operation is started by pumping through the filter a charge of new or filtered 52° Tw. caustic containing 20 to 25 lbs. of Nerofil.

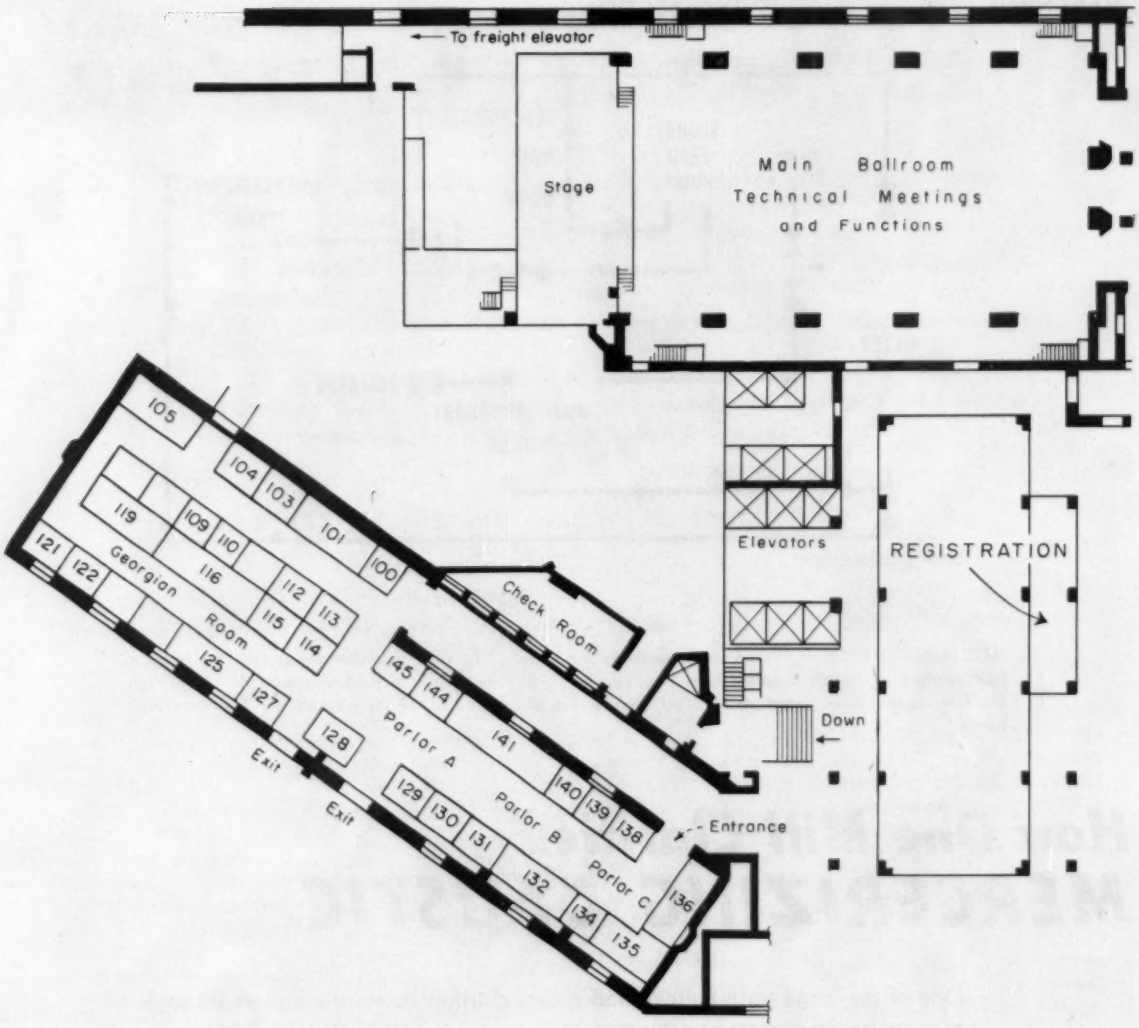
A thin cake of the filtering aid is thus deposited on the screens, and then used caustic is pumped through.

To maintain the filtering effect, 0.05% of Nerofil, based on the weight of the caustic, is added to the flow by a proportioning pump.

After each 24-hr. run, the filter is opened and the screens are cleaned, which requires only 20 mins. The filter is closed and is ready for another 24-hr. cycle.

The filtering system operates continuously during the operation of two mercerizing ranges, each having a caustic system containing about 2,000 gals. of 52° Tw. caustic.

Advantages of the method include cleaner, more-active caustic and cleaner wash waters. In addition, there is less loss of caustic, higher recovery rate, and reduced stream pollution. The plant expects the installation to pay for itself within two years.



Guide to Exhibitors

American Association of Textile Chemists & Colorists

1957 National Convention

ALCO OIL & CHEMICAL CORP. (136)

Trenton Ave. & William St., Philadelphia, Pa.

Features finishes for the textile industry.

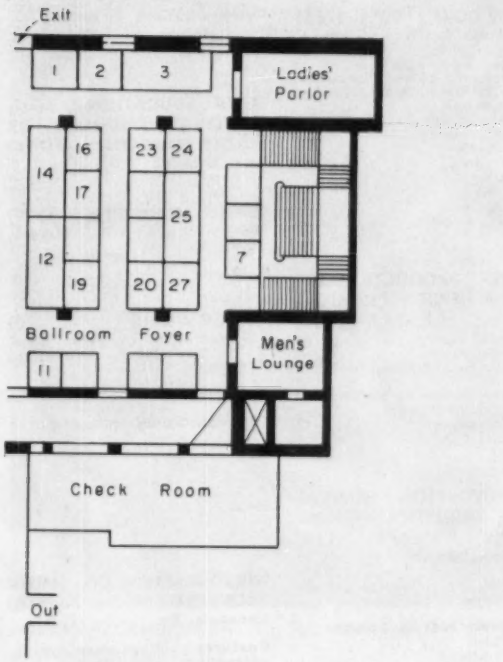
Representatives at booth:
F. M. Tolin
O. B. Hager
J. P. Seguin
J. M. Allan
J. B. Winkler
R. P. Restrepo
D. L. Worth

AMERICAN ANILINE PRODUCTS, UNIT OF KOPPERS CO., INC. (101)

Koppers Bldg., Pittsburgh, Pa.

Features vats, vat dispersions, naphthols, wool dyes, dyes for man-made-fiber fabrics.

Representatives at booth:
T. C. Keeling
J. J. Marshall
R. A. Gopel
R. W. Freeze
K. C. Ruppenthal
J. H. Orr
F. S. Stover
H. Gorton
H. Goerner
A. Brown



The American Association of Textile Chemists & Colorists will hold its 36th National Convention at the Statler Hotel, Boston, Mass., November 14, 15, and 16. The exhibits will open at 10 a.m. on Thursday and close at 5 p.m. on Saturday.

Highlights of the three-day meeting include the Olney Medal Award luncheon on Friday and the Intersectional Contest Paper presentation Friday afternoon, followed in the evening by a concert by the Harvard College Band and Glee Club. On Saturday there will be an annual banquet.

S. Wilson
O. J. Pemberton
R. W. Brewer
E. K. Bush
D. Fitton
N. Pratt

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS, ARCHIVES COMM. (100)
845 Edgewater Road, New York, N. Y.

Features documents, letters, and manuscripts showing the historical background of AATCC.

Representatives at booth:
Dr. S. M. Edelstein
R. Jacoby
N. Johnson
P. J. Wood
W. Kady
M. Lydon

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS, RESEARCH DIV. (141)
Lowell Technological Institute, Lowell, Mass.

Features abrasion testing with Accelerator (high-speed tester), dry-cleaning tests and washfastness tests.

Representatives at booth:
Dr. H. W. Stiegler
G. J. Mandikos
G. R. Thompson
G. M. Kidder
H. E. Glidden
R. Desmairais

AMERICAN SOCIETY FOR TESTING MATERIALS (17)
1916 Race St., Philadelphia, Pa.

Features publications for the textile industry.

Representatives at booth:
Fred F. Van Atta
Paul J. Smith

ATLAS ELECTRIC DEVICES CO. (144)
4114 N. Ravenswood Ave., Chicago, Ill.

Features pilling tester and Weather-Ometer.

Representatives at booth:
J. W. Lane
J. E. Norton
M. J. Babey

BUSCHMAN PRODUCTS, INC. (139)
369 Lexington Ave., New York, N. Y.

Features two new models of the Jet-Mogenizer.

Representatives at booth:
N. H. Buschman
N. Lieblich
A. W. Bailey
J. McLaughlin

CELANESE CORP. OF AMERICA (25)
180 Madison Ave., New York, N. Y.

Features new dyeing technique that provides multicolor effects by a one-bath process; new pad-steam process for continuous dyeing of Arnel-cotton blends; new "S" antistatic process for rendering Arnel and Arnel-containing fabrics permanently antistatic.

Representatives at booth:
C. S. Clutz
F. Fortess
W. Schoeneberg
A. F. Tesi
P. C. Duggan
B. F. Pimentel
G. Ward

CHEMSTRAND CORP. (3)
Decatur, Ala.

Features dyed fabrics of Acrilan and nylon; display on Chem-nyle dyeing process; new method for Acrilan-wool blend dyeing.

Representatives at booth:
W. H. Hindle
E. V. Burnthall
Dr. C. Gayler
L. Beach
G. A. Poovey
W. C. Privette

CIBA CO., INC. (105)
627 Greenwich St., New York, N. Y.

Features Cibacron dyes and Microfix pigments.

Representatives at booth:
E. Caswell
F. Raff
F. Schlaeppi
E. P. Ward

CLARK PUBLISHING CO. (11)
218 W. Morehead St., Charlotte, N. C.

Features a textile publication.

CLEWORTH PUBLISHING CO., INC. (109)
1 River Road, Cos Cob., Conn.

Features a textile publication.

CUSTOM SCIENTIFIC INSTRUMENTS, INC. (115)
541 Devon St., Kearny, N. J.

Features fabric-testing equipment.

Representatives at booth:
H. J. Bultman

DIAMOND CRYSTAL SALT CO. (121)
916 S. Riverside Ave., St. Clair, Mich.

Features salt products.

Representatives at booth:
W. Lonsdale
C. W. Schornatheimer
E. D. Gildersleeve
G. F. Chadwick
F. X. O'Brien
F. L. Cotter

DOW CORNING CORP. (103)
Midland, Mich.

Features Syl-Mer finishes and Syl-Soft silicone softeners.

Representatives at booth:
F. L. Dennett
R. A. Ford
E. M. Eddington
H. F. Beutler
B. G. Simpson
B. G. Pettigrew
W. T. Rossiter
W. D. Dieome
J. J. O'Neil
V. J. Shanahan
R. E. Knopf
R. H. Montgomery
C. E. Gibson
R. M. Dameron

ELMO INTERNATIONAL (23)
7 Church St., Paterson, N. J.

Features wet-processing machinery.

Representatives at booth:
E. Comerio
M. Vallen
E. Vallen

FABRIC RESEARCH LABORATORIES, INC. (128)
1000 Providence Highway, Dedham, Mass.

Features 24-in. narrow-fabric compactor and environmental test chamber.

CONTINUED ON PAGE 138

Representatives at booth:
Dr. K. R. Fox
F. K. Burr
L. S. Backer
A. M. Glass
T. T. Constantine

FAIRCHILD PUBLICATIONS (19)
7 E. 12th St., New York, N. Y.

Features a textile publication.

FOXBORO CO. (112)
38 Neponset Ave., Foxboro, Mass.

Features the magnetic flow meter, cell transmitter, pneumatic speed transmitter, pH electrode, Redox electrode assembly, conductivity cell, and CycleLog temperature controller.

Representatives at booth:
W. H. Ridley
H. H. Michelmore
J. W. Gordon
J. E. Allen, Jr.
S. C. Alexander
R. M. Green

GASTON COUNTY DYEING MACHINE CO. (138)
Stanley, N. C.

Features sample dyeing machines.

Representatives at booth:
G. Hacker
W. Newcomb
A. March

GENERAL ELECTRIC CO. (2)
40 Federal St., West Lynn, Mass.

GOODYEAR CHEMICAL DIV., GOODYEAR TIRE & RUBBER CO. (14)
Akron, Ohio

Features textile applications for Chemigum, Pliovic, and Pliolite latices.

Representatives at booth:
C. O. McNeer
J. E. Warner
J. Platner
E. W. Scott
J. W. Bear
F. A. Mather
D. E. Neese
W. F. Gerrow
J. S. Brice
A. R. Merritt
J. M. Hussey
J. R. Houlette
R. J. Mayfield

HILTON-DAVIS CHEMICAL CO., DIV. OF STERLING DRUG, INC. (12-13)
2235 Langdon Farm Road, Cincinnati, Ohio

Features dyes, pigments, and optical brighteners for textiles.

Representatives at booth:
N. S. Knaggs
S. Y. Stribling
W. A. Green
E. A. Britton
W. L. Sharp
G. N. Nickles
W. H. Howard
A. S. Davis

HOWES PUBLISHING CO., INC. (131)
44 E. 23rd St., New York, N. Y.

Features a textile publication.

INSTRON ENGINEERING CORP. (113)
440 Hancock St., Quincy, Mass.

Features new table-model tensile testing instrument and complete line of accessory equipment, including the Instron integrator.

Representatives at booth:
H. Hindman
G. S. Burr
L. F. Cedrone
L. F. Sheats

INSTRUMENT DEVELOPMENT LABS., INC. (110)
67 Mechanic St., Attleboro, Mass.

Features color-matching equipment.

Representatives at booth:
D. R. Hall
F. Johnson
F. H. Gerring

INTERNATIONAL SALT CO. (104)
Scranton, Pa.

Features samples of evaporated, granulated, and rock salt available to the textile industry, in addition to a plastic Lixator.

Representatives at booth:
O. W. McKeown
W. W. Harris, Jr.
N. M. Agnew
A. J. Hulsebosch

MACBETH DAYLIGHTING CORP. (1)
Newburgh, N. Y.

Features color-matching lighting equipment and densitometers.

Representatives at booth:
R. Meeker
Mr. McCurdy

MORTON MACHINE WORKS, INC. (134)
1718 Third Ave., Columbus, Ga.

Features dyeing equipment for package, raw stock, top, and beam; elevated-temperature dyeing equipment for natural and man-made fibers.

Representatives at booth:
H. C. Jackson
J. F. Notman
J. R. Angel

MORTON SALT CO. (145)
120 S. La Salle St., Chicago, Ill.

Features C. G. 999 salt.

Representatives at booth:
E. R. Ravena
J. Culp
F. Etzel
R. A. Simpson

NOPCO CHEMICAL CO. (122)
Harrison, N. J.

Features textile processing chemicals.

Representatives at booth:
W. Brewer
L. Rossiter
G. Zust
R. Schubert
R. Jones
T. Fahey
A. Waldron
J. Gammon
W. Dolan
J. Twarog

NU-LITE CORP. (135)
41 S. Sixth St., Newark, N. J.

Features new development in fluorescent lighting designed for positive color evaluation.

Representatives at booth:
S. M. Caravetta
R. D. Cioffi
J. J. Callery
R. Steinhart
E. Kloski
J. N. Allen
W. A. Vandivere

NUODEX PRODUCTS CO., DIV. OF HEYDEN CHEMICAL CORP. (24)
Elizabeth, N. J.

Features textile fungicides.

Representatives at booth:
R. C. Brumberger
P. F. Klens
W. J. Stewart

OLIN MATHIESON CHEMICAL CORP., INDUSTRIAL CHEMICAL DIV. (119)
Baltimore, Md.

Features chemicals for textile processing.

Representatives at booth:
J. F. Carey
J. G. Chalfant
W. H. Eastburn
W. W. Northgraves
D. Richardson
L. E. Russell
J. F. Synan
J. J. Tepas
O. J. Theobald
B. H. Wojcik

ONYX OIL & CHEMICAL CO. (114)
190 Warren St., Jersey City, N. J.

Features antistatic agent for man-made fibers and fabrics.

Representatives at booth:
F. O. Robitschek
P. E. MacLean
P. D. Jacobs
M. Schlesinger
H. C. Wood
A. E. Hardy
G. Thomas
L. S. Goldberg

ROHM & HAAS CO. (27)
Washington Sq., Philadelphia, Pa.

Features samples of fabrics chemically treated.

Representatives at booth:
R. G. Thomas
H. F. Lawton
H. C. Borghetty
H. S. Travis
J. M. Schandler

TANATEX CORP. (130)
Belleville Turnpike, Kearny, N. J.

Features Dacron fabrics dyed with Carolid and Tanavol and various Tanatex products.

Representatives at booth:
P. J. Scott
Dr. S. M. Weinstein
W. Shive
A. Dabal

TESTFABRICS, INC. (140)
55 Van Dam St., New York, N. Y.

Features products used in dyestuff and quality-control laboratories.

Representatives at booth:
W. Klaas
H. Levitt
Mrs. M. Blunck

TEXTILE EDUCATION EXHIBIT, NATIONAL COUNCIL FOR TEXTILE EDUCATION (116)
Lowell, Mass.

TEXTILE INDUSTRIES (127)
806 Peachtree N.E., Atlanta, Ga.

Features a textile publication.

TEXTILE WORLD (20)
330 W. 42nd St., New York, N. Y., and 201 E. Coffee St., Greenville, S. C.

Features a textile publication.

Representatives at booth:
P. M. Thomas
J. H. Blore
R. W. Pinault
W. C. McMickle
R. L. Chisholm
H. J. Bernard
H. C. Harvey
S. Henry

TURBO MACHINE CO., SMITHDRUM DIV. (16)
Lansdale, Pa.

Features package-yarn dyeing, extracting, and drying machines; skein-dyeing machines for natural and man-made fibers; and hosiery and sweater dyeing and drying machines.

Representatives at booth:
W. K. Wyatt
A. Bagian
W. A. Fuchswanz

UNITED STATES TESTING CO., INC. (125)
1415 Park Ave., Hoboken, N. J.

Features testing and research services.

Representatives at booth:
F. P. Brennan
R. T. McAndrew
A. J. Kellner
W. H. Jones
A. C. Farnham

UNION CARBIDE CORP. (132)
32-40 43rd Ave., Long Island City, N. Y.

Features surface-active agents.

WARWICK CHEMICAL DIV., SUN CHEMICAL CORP. (129)
10th St. and 44th Ave., Long Island City, N. Y.

Features dyes and finishes for the textile industry.

Representatives at booth:
T. F. Parsons
J. R. Gimeli
H. C. Whittemore
H. B. Goldstein
A. J. Picciotti
R. F. Pollard
A. F. Costello
A. N. Henschel
I. F. Laramee
C. A. Lanendola
R. G. Perriello
E. T. McIlwain
S. Nye

EDWIN L. WIEGAND CO. (7)
7500 Thomas Blvd., Pittsburgh, Pa.

Features Chromalox electric far-infrared radiant-heating equipment.

Representatives at booth:
W. L. Thomson
L. C. Pelkus

ROVING PACKAGES weigh 3½ lbs. each, and they are creeled directly from trucks.

VACUUM CLEANER is used to clean around the rolls three times each week.

Addition to Hickman Mill Houses NEW SPINNING FRAMES

The Graniteville Co., Graniteville, S. C., has built a new addition to its Hickman Mill. Carding, spinning, and weaving are housed in the new structure. The spinning frames have—

- **Collecto-Vac suction cleaners**
- **New Era spindles**
- **Variable-speed pulleys**

The Graniteville Co., Graniteville, S. C., has completed an addition to its Hickman Mill. The three-story addition is 155x160 ft. and contains approximately 74,000 sq. ft. of floor space.

Constructed of brick, the building has steel I-beam supporting columns and a built-up tar and gravel roof. The walls are windowless but have openings for air-circulating louvers.

The flooring is maple on pine subflooring. The floor in each room has been sanded, sealed, and varnished. Air-changing units are in penthouses on the roof.

Weaving is located on the first floor, carding on the second floor, and spinning on the third floor. All machinery, with the exception of the cards, is new. The 144 cards have been rebuilt. The card room contains new Ideal drawing frames that deliver 250 ft. of sliver per minute. The Saco-Lowell roving frames are also new.

Frames Are Spinning 14s Yarn

The spinning room contains 69 new Saco-Lowell warp spinning frames equipped with Collecto-Vac suction cleaners. Each frame has 248 New Era spindles. The frames are 4-in. gauge and have 9-in. traverse. They spin a 0.4493-lb. package of 14s yarn.

The frames have individual motor drives with variable-speed pulleys. Spindle speed is 8,500 rpm. Rings are 2¼-in. with No. 2 flange. The frames have separators and top clearers. A No. 8½ traveler is used. Doffing cycle is 7½ hrs.

The creels are too high for top storage of extra roving, and creeling is done from trucks. Each truck holds 32 roving packages 12x6½ ins. and weighing 3½ lbs.

The mill has found several advantages in creeling from trucks instead of from roving stacked on top of the creel. The roving is kept cleaner, there is less handling and fewer soiled and damaged packages, and turnover of stock is more uniform.

Pneumatic roll cleaners are used, and the area around the rolls is kept clean by vacuum. An operator cleans

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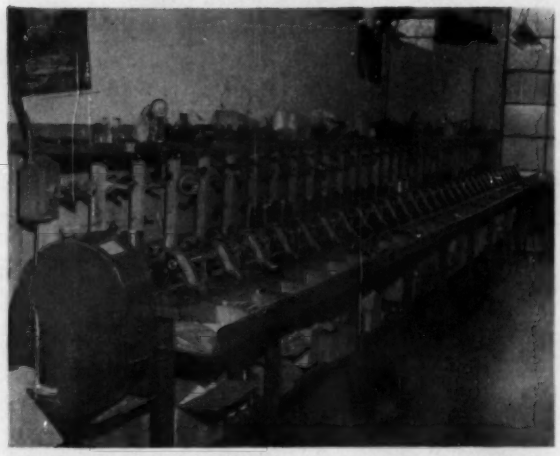
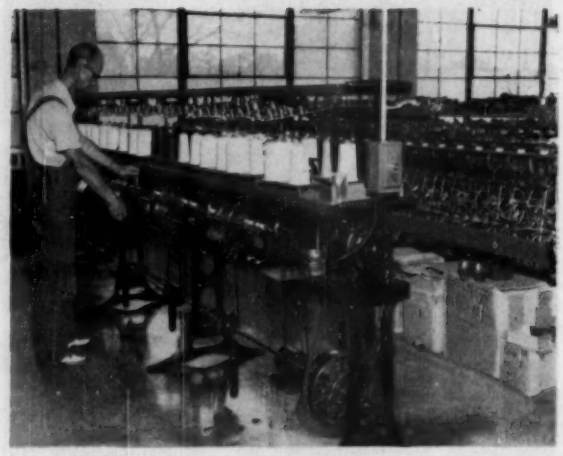


FILLING WINDING is done on two types of machines. This Glodde 30-spindle model is currently being used for 150- and 200-den. dyed yarn.



MACHINE MAINTENANCE is under the supervision of Henry Dyer. He can adjust this Universal winder as easily as he can fix a loom.

Low Loom Speed Helps Make High-Quality WOVEN LABELS

To overcome the many cloth defects common in fancy labels woven with up to four colors of filling, this large weaver of woven labels has—

- **Established reasonable loom-speed standards**
- **Set up a strict machine-maintenance program**

GOOD MAINTENANCE PRACTICES and reasonable loom speed help The Premier Woven Label Co., Inc., Paterson, N. J., weave high-quality labels. Many of the labels are for luxury garments.

About 95% of Premier's labels is woven from filament man-made fibers. The remaining 5% of fibers is cotton, which is used as filling in special fabrics. Most fabrics woven are all-rayon.

Taffeta and satin weaves are common label constructions. Labels vary from ½ to 3 ins. wide. Warp constructions range from 80 to 850 ends per inch. Picks per inch are 80 to 100.

Two Types of Winders Are Used

Filling is wound on loom bobbins on two types of winders. A Glodde 30-spindle winder has a spindle speed of 3,600 rpm. All filling except 100-den. filling is wound on this machine. Two operators tend the winder.

The other winders are Universal No. 10 models with 26 heads, and they wind four packages per head. Spindle speed is 1,800 rpm. Only 100-den. yarn is wound on these machines. Two operators tend the winders.

Tube-and-head bobbins are 2⅜ and 2⅛ ins. long, and filling is wound to an outside diameter of ¾ in.

Warps are beamed on a four-head Ramsay Hydro-Warper. A Cocker creel is used. Warper speed is usually 200 to 300 yds. per min. depending on the immediate need, but 400 yds. per min. can be run when weave-room production demands it.

Premier Uses Many Colors

All yarn possible is bought in standard colors on cones. These cones are creeled direct on the filling winders or warper creels.

But many of Premier's labels demand specially dyed yarns. These yarns are bought in skeins and dyed in an outside dyehouse to Premier's specifications.

The dyed skeins are wound to bobbins at Premier on Atwood skein winders. Then they are wound on Glodde or Universal winders or warped on a horizontal warper.

Weave-room efficiency ranges between 90 and 95%, and second-quality fabric is constantly below 2%.

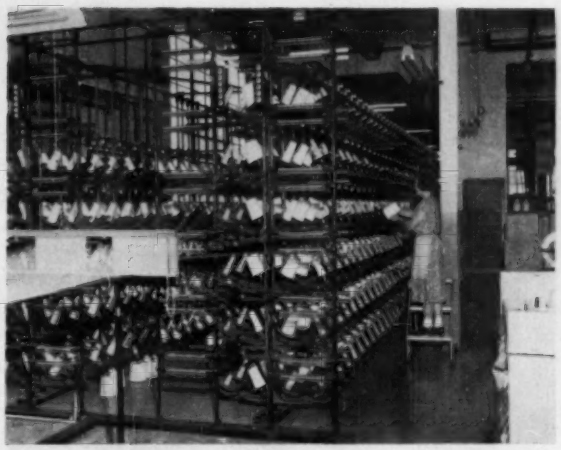
Machines Are in Good Condition

Henry Dyer, in charge of maintenance, attributes the high weaving efficiency to "reasonable loom speeds and constant alertness in keeping all machines in the plant in good condition."

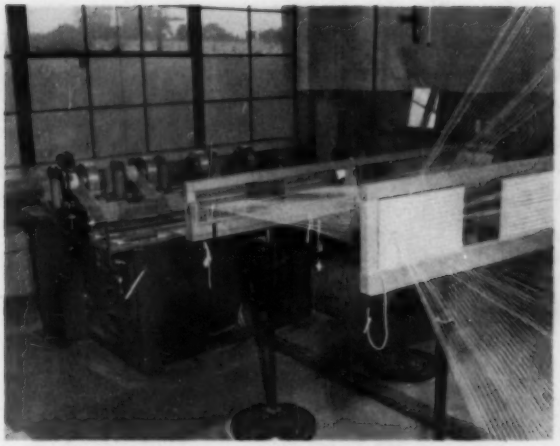
There are 32 Fletcher multishuttle narrow-fabric looms in the mill, and loom width is 15 ft. 8 ins. to 17 ft. Loom speed is kept under 100 ppm. Looms have up to four-bank battens.

All looms have jacquard harness motions. Loom motors are ¾ to 1½ hp. depending on the loom width. Looms have friction let-offs on individual warp beams.

The weave room is operated two 8-hr. shifts each day, and all other mill departments are run one 8-hr.



WARPER CREEL, one of two at Premier, is a late-model Cocker machine. Tension disks are set to control the ends closely. The other creel is for a horizontal warper.



WARPER makes from one to four 8-in. or 12-in. loom beams at once. Speed of 400 yds. per min. is run when warps are needed fast.

shift. Weavers attend two or three looms, depending on the fabric being woven. There's one loomfixer for each shift.

Warps at the loom are twisted by a twister-weaver. All jacquard designing and card cutting is done in the plant.

Employees Stay on the Job

Replacement employees are trained at the mill by on-the-job training methods. For example, a new learner-weaver is placed with an experienced weaver.

But very few employees are needed. For instance, Germaine Hantson, the warper operator, has been working at the mill since it was established in 1918. And many other employees have long employment records.

A top-management man at Premier says, "Close checking of looms at style changes and replacing all worn or defective loom parts keeps fabric quality high.

"Our sturdy hardwood floor on a firm building foundation also does much to keep mill efficiency high. For example, when a loom stops, there is very little vibration from surrounding looms to cause damage. Therefore snarls and fabric defects are prevented."

Employees Pin Down Defects

Labels are either first quality or waste; second-quality labels are not sold. Weavers have to be constantly alert for possible fabric defects in the labels such as:

1. **Bobbin run-outs.** Weavers patrol their looms constantly to prevent run-outs.

2. **Pulls from loose filling** from rough handling at bobbin changes. Weavers are trained to cut the threads so that long tails aren't left to catch and hang on objects.

3. **Incorrect shuttle tension.** The filling-tension adjustment must be very close; and if it isn't checked frequently, fabric defects result.

4. **Broken warp ends.** Weavers constantly examine the labels as they are woven to prevent broken and missing warp ends.

Humidity Is the Big Problem

Weave-room humidity must be watched constantly during summer months. Appreciable variation in the relative humidity results in jacquard-cord shrinkage and elongation. A 12- or 13-ft. cord varies in length as

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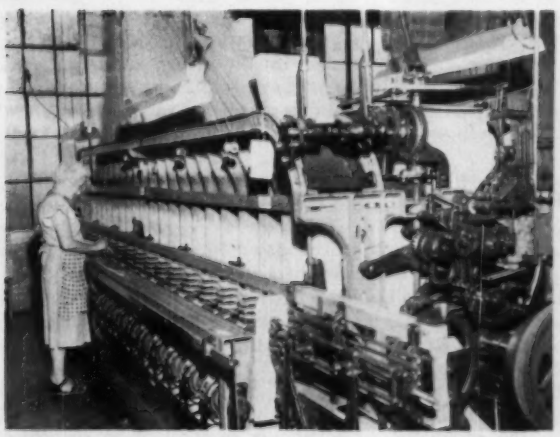
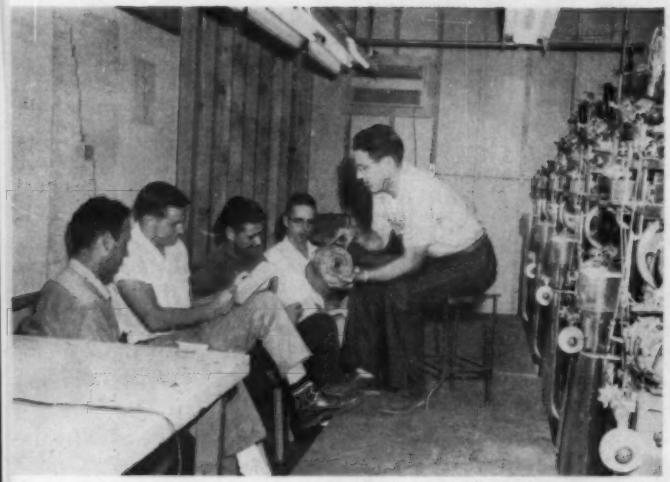
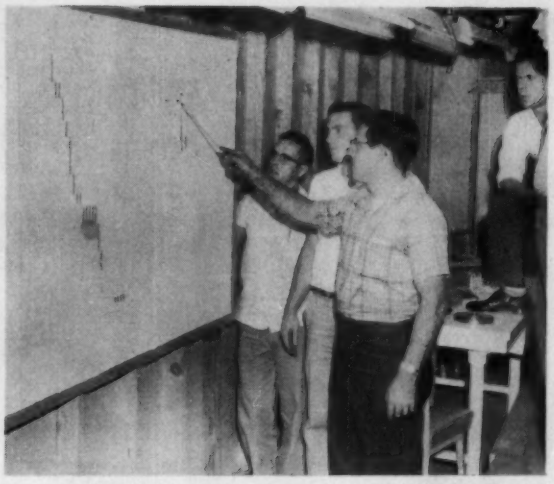


NEWEST LOOM is a Fletcher four-bank-batten loom. The speed is held below 100 ppm. to weave the filament man-made-fiber labels.

PACKAGED LABELS are wound on seven sizes of cores. The mill-made storage bin furnishes the separated cores to the operator's finger tips.



TRAINING PROGRAM is carried out in a partitioned-off corner of the knitting room, but conditions are similar to those in the knitting room. Knitting machines, however, are spaced wider apart.



WALL CHARTS are used to teach many basic principles. Various needles and sinkers are illustrated on a wall chart. A progress chart on the wall shows trainees what subjects have been covered and what is to be tackled next.

Claussner Hosiery Co. Now *TRAINS FIXERS FASTER*

A new system of training knitting-machine fixers produces competent men in four to six months, compared with the several years' training required under the old system. Trainees receive a theoretical and practical training that includes—

- **Basic principles of knitting**
- **Thorough knowledge of the machine**
- **Analysis of faults**

TRAINING KNITTING-MACHINE FIXERS in most hosiery mills is a haphazard job. In most mills, a fixer is promoted from a knitter because he does his work well. He gets little formal training; but this is not so at Claussner Hosiery Co., Paducah, Ky., where the Analytical Method of training has been adopted to train fixers.

Under the old system, the fixer spent several years learning the job. With the new method of training, a learner can now look after a set of machines in less than six months.

Claussner is steadily expanding its seamless-hosiery department. Trained men are needed urgently; and the men must be highly skilled to handle the complex machines that knit 400- and 474-needle hosiery.

The first eight weeks of training is done in a partitioned-off section of the main knitting room. An air conditioner is installed in one wall of the partition. Lighting and other conditions closely resemble conditions in the knitting room.

Machines Are Modern

Five 474-needle Scott & Williams KN machines with automatic take-up attachments are arranged in front of the lineshaft, and a platform is built in front of the machines. The machines are spaced to allow more-than-ample working space. Four men train at one time, and each traineee works on one machine while the fifth machine is handled by the instructor.

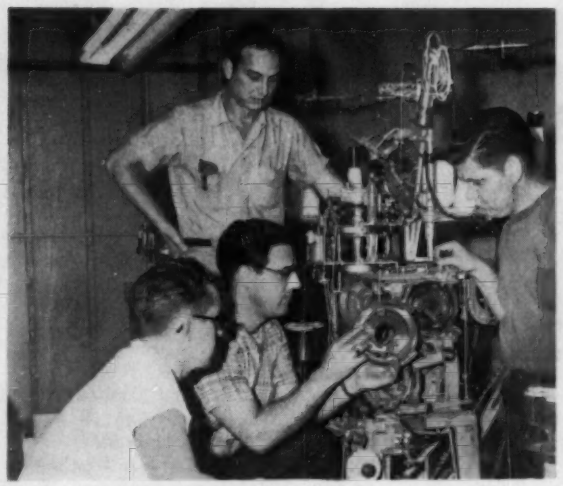
Men selected for training are knitters or men from outside the plant who have mechanical experience. Men who have passed the selective-service age are usually chosen for training.

Instructors are chosen from experienced fixers who are adaptable to new ideas and can freely pass knowledge to others. Instructors spend their whole time with the trainees, and they are not responsible for other jobs.

The eight-week training period is broken down into four phases. The first phase includes an introduction to the machine. The machine is dismantled and assembled during the second phase.

No Production Is Made

An analysis of faults and their rectification is emphasized in the third phase. During these stages of training, no production work is done. The trainee spends all his time in the



KNITTING MACHINES used in training are the latest models. Each trainee works on one machine. The instructor demonstrates on his own machine, and the machines are taken apart and assembled.

ANALYSIS of faults is an important stage in training. About 50 stockings containing various faults are examined. These faults are not everyday faults. The machines are doctored by the instructor and fixed by the trainees.

school. In the final phase, he works in the knitting room on regular production machines.

During the first phase of training, the trainees are taught the correct way of operating the machine. They are shown how to stop and start the machine and how the machine makes different parts of the stocking.

A tour of the mill is arranged for the trainees, and the looping operation is studied. A knowledge of looping helps trainees to see the looper operators' problems and improve the looping operation.

Basic Principles Are Taught

Basic knitting mechanisms are taught first. The needle is introduced, and the stitch-forming action is explained. Sinkers are then introduced, and their relationship to the needles is taught.

The next parts of the machine that are studied are the cylinder, cams, and dial. Each part is removed in turn and thoroughly discussed.

The class progresses at the speed of the slowest worker. A part is not studied until knowledge of the previous part has been mastered.

Trainees are provided with note books, but no written or printed notes are provided. Trainees are encouraged to take their notes home to be studied.

As each part is removed, it is placed in a box near the machine it came from. These parts then go back on the same machine. Parts are not allowed to be mixed.

A revision period of 2 hrs. is set up at the end of each day during this period. This revision period consists mainly of questions from the instructor and the trainees and is considered an important phase of training to help the trainees become more analytical in their thinking.

The order of the steps in the 30-day program that follows the introductory phase is closely followed. This phase of the program consists of removing each part from the machine, making a close study of the part and its relation to other parts, and replacing the part.

The instructor removes the part from his machine, and the trainee then removes the same part from his machine under the eye of the instructor. The parts are replaced and then checked by the instructor.

While the cylinder is off of the machine, the needle groupings are studied. The cylinder is removed twice during this training period. The machine is started after each rebuilding exercise, and a stocking is knitted.

Machines Are Torn Down

About five days are spent removing and assembling the machine head. The lower part of the machine, including the drive gears, is then studied.

The final phase of this stage in the training program deals with timing and setting the machine. Fine details are carefully studied. The main shaft is removed, and the function of the gears on it are explained.

At this stage, a measure of the trainee's ability is taken. Speed is not taken as a criterion of ability. No emphasis has yet been placed on speed. Trainees who obviously do not have the ability to be fixers are weeded out here, but doubtful trainees are allowed to continue.

Teaching aids are used wherever possible. Whole units of the machine are placed on a table while the class sits around the table and takes notes.

Wall Charts Are Used

Wall charts show such important parts as the rack wheel. Teeth on the wheel where changes are made by the machine are explained.

Charts showing needle positions are pinned on the wall. A progress chart showing the items to be studied is marked when the particular item has been taught.

A detailed list of tools is suggested for each fixer. No tools foreign to the knitting machines are allowed to be used. Instruction is given on the correct use of the tools, which include drills, taps, files, and a micrometer.

The stage of the program devoted to the analysis of faults is aided by practical demonstrations. About 50 stockings containing various faults have been collected. These faults are not the everyday faults with which the trainee has become familiar.

Faults Are Analyzed

The instructor uses the analytical approach here by asking the trainees to suggest possible causes of the faults. Their theoretical knowledge is then tested to suggest a remedy for the fault.

When these faults have been stud-

CONTINUED ON PAGE 226

Change STEEL-ROLL APRONS As Soon As They Go Bad

- A large cotton mill is saving over $13,000 a year in production loss by having section men change aprons as soon as a flag shows instead of waiting for shop personnel to make the repair
- Average downtime per spindle has been reduced from 4½ hrs. to less than 1 hr., and fewer aprons have to be cut off
- Here's how the new system works—

By JACK ALLAN

DOWNTIME PER SPINDLE in a large cotton mill formerly averaged 4½ hrs. per spindle when a steel-roll apron went bad. A new system of apron maintenance was installed, and downtime dropped to less than 1 hr.

The old procedure was for the shop maintenance crew to replace bad aprons once each 8-hr. shift while steel rolls were being checked and repaired. And since each apron supplies two spindles, total downtime per apron was 9 hrs.

Spindle Downtime Is Costly

This mill, which operates four spinning rooms, had an average of 60 spindles down at all times. Total downtime was 270 hrs. per shift. For 10s combed yarn, this downtime caused a production loss of 0.1 lb. per hr., or 27 lbs. of salable yarn. At 80¢ per lb., the production loss amounted to $324 per week, or $16,200 per 50-week year.

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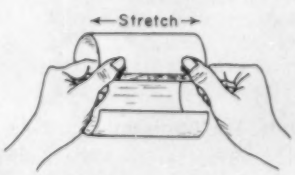
Comparative Production Loss While Spindles Are Down for Apron Replacement

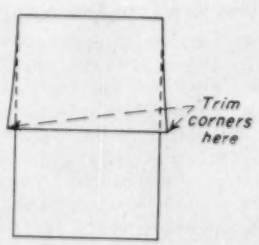
Aprons replaced (8 hrs.)	60	50	40	30	20	10
Idle spindles per shift	120	100	80	60	40	20
Downtime per spindle (hrs.)						
Old system	4½	4½	4½	4½	4½	4½
New system	1	1	1	1	1	1
Downtime per shift (hrs.)						
Old system	540	450	360	270	180	90
New system	120	100	80	60	40	20
Production loss per spindle hour (lbs.)	0.1	0.1	0.1	0.1	0.1	0.1
Production loss per shift (lbs.)						
Old system	54	45	36	27	18	9
New system	12	10	8	6	4	2
Value of production loss per shift ($)						
Old system	43.20	36.00	28.80	21.60	14.40	7.20
New system	9.60	8.00	6.40	4.80	3.20	1.60
Value of production loss per 50-week year ($)						
Old system	32,400	27,000	21,600	16,200	10,800	5,400
New system	7,200	6,000	4,600	3,600	2,400	1,200

STEEL-ROLL APRONS replaced on schedule cost about five times as much in terms of lost production as aprons replaced by section men. The dollar values shown here are based on 10s combed yarn selling at 80¢ per lb.

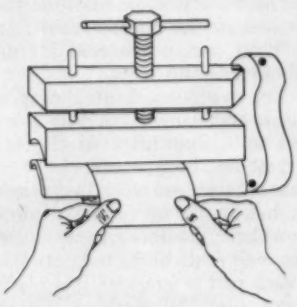
How To Glue Lapped Aprons



NARROW END OF APRON is stretched between fingers before splice is made.



CORNERS that protrude at the splice should be trimmed off.



LAP is centered on the press, and light pressure is applied for 30 secs.

Four Ways To Scour DOMESTIC WOOL

- Three-bowl scouring trains can be used for wools that do not contain much grease
- The desuinting method can be applied with a four-bowl scouring train

By **GUSTAV ZELLNIK,** Consulting Editor, TEXTILE WORLD

DOMESTIC WOOL is usually graded on the fine side from 60s to 64s. There are several methods of scouring this wool.

A three-bowl scouring train can be used when the wool does not contain an excessive amount of grease. If the grease content is higher and a lower scouring yield is expected, increase the soap and soda-ash content and use a four-bowl scouring train.

How To Desuint Wool

If the desuinting method of wool scouring is required, use a four-bowl scouring train. The first bowl is used as a desuinting bowl. The water must be changed often in this bowl to get best results. Change the water when it appears dirty.

The fourth bowl is the rinse bowl, and it gives the wool the final touch to remove the remaining impurities and chemicals used in the scouring process.

For scouring greasy wool of 58s to 64s quality, you can use a formula made up of 8 oz. of red-oil chip soap per gallon and 8 oz. of sodium carbonate per gallon solution. The temperature is maintained at 120° F. in all bowls, and the last bowl is a rinse bowl.

This formula is based on scouring 1,000 to 1,500 lbs. of grease wool per hour. Continue this general cycle all day, and vary it according to the condition of the wool.

If the wool is greasier, use a small percentage more of the figures suggested in the table. If the wool has a lower-than-expected grease content, reduce these figures by a small amount.

Dry Wool at 180° F.

Drying temperature should not exceed 180° F. If the wool is dried at higher temperatures, the wool fibers get too brittle.

Do not dry the wool at temperatures too far below 180° F. because the lower temperature has a detrimental effect on the fibers.

Finally, you should always watch the type and grade of wool to be scoured. Scouring is an operation to be watched by skilled persons, and a close check must be kept on the wool as it goes through the scouring train to see if the wool gets cleaner as it moves from one bowl to the next.

	1st bowl	2nd bowl	3rd bowl
Water (gals.)	1,500	1,000	1,000
Temperature (° F.)	125 to 130	125	120
Soap flakes (lbs.)	10 to 12½	7½	0
Soda ash (lbs.)	75	50	0
Hourly addition			
Soap flakes (lbs.)	0	3	0
Soda ash (lbs.)	25	5	0

FORMULA for a three-bowl scouring train contains soap flakes and soda ash and is suitable for wools that don't contain an excessive amount of grease.

	1st bowl	2nd bowl	3rd bowl	4th bowl
Water (gals.)	1,500	1,000	1,000	1,000
Temperature (° F.)	125 to 130	125	120	120
Soap flakes (lbs.)	15	12½	10	0
Soda ash (lbs.)	75 to 80	50 to 55	0	0
Hourly addition				
Soap flakes (lbs.)	5	3	0	0
Soda ash (lbs.)	25 to 30	7½	0	0

A FOUR-BOWL UNIT can be used to scour the wool if the grease content is high and a lower scouring yield is expected. The soap and soda-ash content is increased.

	1st bowl	2nd bowl	3rd bowl	4th bowl
Water (gals.)	2,000	1,500	1,000	1,000
Temperature (° F.)	100	130	125	120
Soap flakes (lbs.)	0	10	7	0
Soda ash (lbs.)	0	75	50	0
Hourly addition				
Soap flakes (lbs.)	0	0	3	0
Soda ash (lbs.)	0	25	3	0

DESUINTING METHOD uses a four-bowl scouring train. Water in the first bowl must be changed often. The final bowl is the rinse bowl to remove impurities.

	1st bowl		2nd bowl		3rd bowl	
Time	Soap (gals.)	Alkali (gals.)	Soap (gals.)	Alkali (gals.)	Soap (gals.)	Alkali (gals.)
6:45	60	60	40	60	30	0
8:30	0	0	20	0	20	0
9:15	0	0	20	0	0	0
10:00	0	0	20	0	0	0
11:00	0	0	20	0	20	0

FORMULA for wool of low qualities is made up of 8 oz. of red-oil chip soap per gallon and 8 oz. of sodium carbonate per gallon solution. The temperature is 120° F. in all bowls.

NEW BUILDING fits into the old building (arrows), and only one wall had to be built. The new roof drops below the eaves of the old roof.

New MILL ADDITION Has Only One Wall

• A Southern mill recently increased production by one-third by building only one wall to join three sections of the existing mill. The addition houses carding, spinning, and weaving.

A RECENT ADDITION of approximately 40,000 sq. ft. of floor space increased the capacity of an older Southern mill building by one-third. New spinning frames and rebuilt E-model looms were added.

The addition balances production in the mill, which was changed from coarse-goods weaving to narrow print cloths several years ago.

To build the addition, virtually only one wall had to be built since the old building formed a U-shape around the new part.

The top floor of the addition was dropped under the eaves of the original building. With this construction, the top-floor ceiling is lower than the surrounding original building. This construction method lowered the building cost.

Only the doors and windows had to be torn out between the old building and the new.

Old Building Foundation Is Left

To keep from disturbing the foundation of the original building in excavating the new building, the last 11 ft. of ground at each side and the last 3 ft. at the inside end were left. Therefore the basement of the addition is smaller than the other three floors of the four-story addition.

The basement was excavated about 8 ft. deep with a bulldozer. The basement floor is concrete and is 6 ins. thick over-all. It is laid on firm red clay. To support the building, two lengthwise rows of 12x12-in. steel columns are in the basement. This same supporting structure is used throughout the new building; but 8x8-in. columns support the top floor.

Basement Is a Weave Room

The new basement is a weave room and houses 160 rebuilt E-model looms. The looms are placed on mounting pads. They are driven by individual motors. The motors are 1 hp., 1,800 rpm., three phase, 60 cycle.

Two lengthwise rows of atomizers supply humidification. In winter when the temperature can be controlled, the temperature is kept at 80° F. and relative humidity is 85%. The atomizers are maintained under the supervision of the mill master mechanic.

Lighting in the basement is rapid-start fluorescent fixtures in 12 widthwise continuous rows. Yarn beams are handled by electric hoist and monorail.

The new first-floor weave room (ground level) is larger than the basement weave room and contains 206 40-in. E-model looms. Floors are hardwood and are finished and polished by machine.

Atomizers and lighting are arranged just as they are in the basement weave room.

Carding and Spinning Are on Top

The second-floor contains belt-driven cards and drawing and roving frames relocated from the old building.

There are four rows of atomizers across the width of the room. Rapid-start fluorescent lamps 8 ft. long are over the drawing and roving frames. Over the cards, the lamps are only 4 ft. long and run the length of the cards. There are four compressed-air outlets.

Filling-yarn spinning frames moved from the old building are on the third (top) floor of the new mill. They are driven by individual motors and are on mounting pads on the wood floor.

As in the card room, there are four widthwise rows of atomizers. The relative humidity in carding and spinning is 65%.

Lamps are 8 ft. long placed in irregular patterns across the width of the spinning frames. The frames have overhead cleaners. There are compressed-air outlets for every two spinning frames.

How To Spin SLUB YARN With Special Attachments

Spun slub yarn can be made on conventional spinning frames, but special attachments are necessary. Here are some pointers on how to—

- **Convert frames**
- **Operate slubbing attachments**
- **Train operators**

By GEORGE B. PEELER

To manufacture spun slub yarn, a conventional spinning mill must (1) overhaul its spinning frames, (2) add special slubbing attachments, and (3) train its operators to run the modified frames.

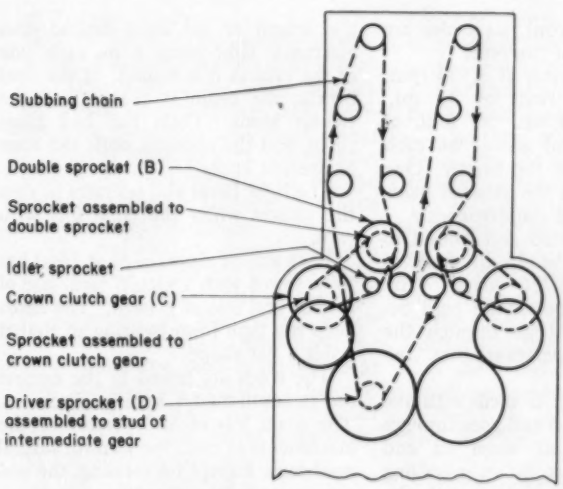
Overhauling should be very thorough, since it is essential that spinning frames be in good mechanical condition before the slubbing attachments are installed. Otherwise, excessive ends down will result.

Worn gears and studs, loose roll necks, and backlash in the gears or rolls will break the yarn or produce thin places behind each slub. These parts should receive special attention in overhauling.

Attachments Can Be Built

Slubbing attachments can either be built in the mill shop or purchased from manufacturers. Both mill-made and commercial equipment is satisfactory if properly built and installed. But if the mill mechanic is not familiar with slubbing attachments, it usually is better to buy parts from a manufacturer.

Several different kinds of attachments can be used to make slub yarn. Two popular types are the head-end drive attachment and the foot-end drive attachment.


Slubbing chain
Double sprocket (B)
Sprocket assembled to double sprocket
Idler sprocket
Crown clutch gear (C)
Sprocket assembled to crown clutch gear
Driver sprocket (D) assembled to stud of intermediate gear

SLUB-YARN ATTACHMENT for head end of spinning frame consists of gears, chains, and sprockets assembled in a special creel. The heart of the mechanism is the crown clutch gear that permits the back roll to be speeded up at regular intervals.

The head-end attachment, shown in the illustration, is driven from a sprocket fastened to one of the intermediate gears. The foot-end attachment is fastened to the rolls at the foot of the machine. Regardless of which attachment is used, the regular crown gear is replaced with an over-running crown clutch gear.

Both pieces of equipment have numerous sprockets, chains, casehardened pins for the slubbing chain, hardened studs for the sprockets, and frames or creels to hold the parts in place.

How Slubs Are Made

After a slubbing attachment is installed, fixers and operators should be instructed in the operating principles of the equipment. For instructional purposes, here's how slubs are made by the head-end slubbing attachment:

The over-running crown clutch gear permits the back roll to be speeded up momentarily. This action increases the amount of roving fed into the drafting rolls and causes a slub in the yarn. The increased speed of the back roll is produced by the slubbing chain, shown at *A* in the illustration.

The chain gets its power from driver sprocket *D* that is assembled to the stud of the intermediate gear. Slubbing pins, inserted in the chain at intervals, protrude on each side of the chain far enough to engage the double sprocket *B* assembled to the single sprocket.

When the slubbing pins make contact with the double sprocket, the chain transmits power to the double sprocket and causes it to increase the speed of the sprocket on the over-running crown clutch gear *C*. The accelerated speed, transmitted through the draft gears to the back roll, increases the roving supply that makes the slub.

Dimensions Are Predetermined

The length of the slub is determined by the number of pins inserted in consecutive links at any one place in the chain. The length of the slub and the number of pins required to form it are determined by experience.

The distance between slubs is determined by the number of vacant spaces between the pinned links in the chain. The relation between a blank link and the distance it represents in the finished yarn is determined by trial-and-error methods.

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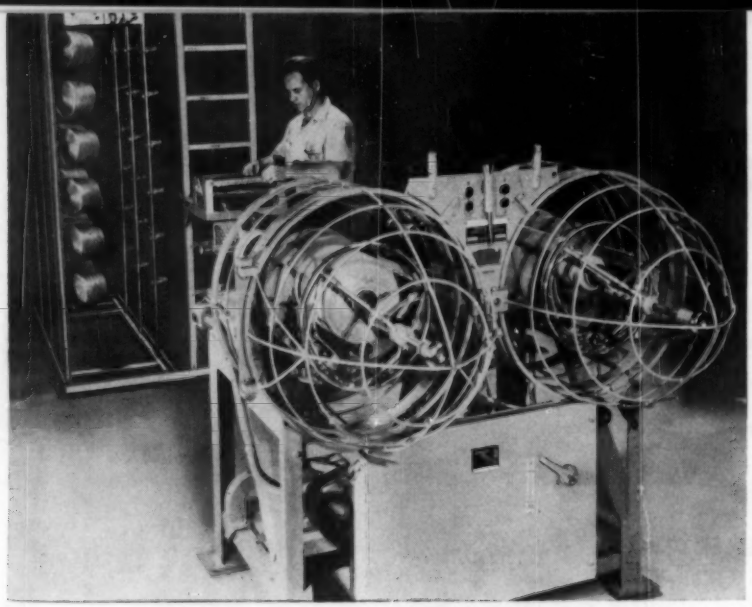


WHIRLWIND TWISTER WINDER with McBride creel stops and rings a bell at an end break or a full package. Then an operator comes from an adjoining department.

High-Speed TWISTER WINDER *Makes Long Ply Cords*

A Whirlwind twister winder is being used by Ideal Fastener Corp., a zipper manufacturer, to make S- and Z-twist cord yarn simultaneously. The cord is knotless and is six times longer than previous packages. Results of the twister are—

- **There's little machine downtime for changes**
- **Turns per inch are accurate**
- **Speed is 85.8 yds. per min.**

CORDS UP TO 6,736 YDS. LONG are made on a Warner & Swasey Whirlwind twister winder at Ideal Fastener Corp., Long Beach, L. I., N. Y. The company has been a producer of zippers for 20 years, and 4½ years ago it added textile machinery to give more-accurate control of its zippers.

Now the company receives cones of yarn from yarn manufacturers and twists, winds, warps, and weaves all tapes for its zippers.

The Whirlwind twister winder has done much to help Ideal manufacture a newly patented zipper that will not catch or snag.

Cones of 16/3 cotton yarn with 18 tpi. in a full range of colors in 2- to 3-lb. packages arranged for pigtail creeling are twisted and wound to 12 and 18 plies with 3½ tpi. on the twister. Two standard sizes of cords are made. For 12-ply cord, four cones of yarn are used at each side of the creel. For 18-ply cord, six cones are used at each side of the creel.

The twister operates at 5,500 rpm. On the standard twist of 3½ tpi., approximately 85.8 yds. per min. of cord are twisted and wound on each of the two heads of the twister. One cord is S twist and the other Z twist, and they are twisted simultaneously.

The yarn is twisted and wound to 18-lb. packages. An 18-lb. cone of 12-ply cord has 6,736 yds of yarn. Knots are not made in the cord because they will not go through the sewing-machine operation that follows twisting.

A McBride creel is used with the twister winder. Each end goes through a stop motion; and when an end breaks, a bell rings in an adjoining department to notify an operator who has other duties besides running the twister winder.

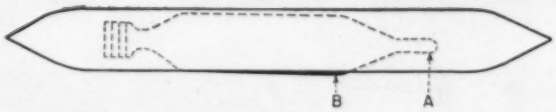
Ideal has modified the stop motion of the twister winder because of the length of the cord desired. An electronic light beam is on each side of the yarn as it is wound. If the cord breaks, the beam is broken and the twister stops. Then the bell rings again, and the operator doffs the cone to prevent knots.

The light beam also operates to stop the twister when the cone fills with yarn.

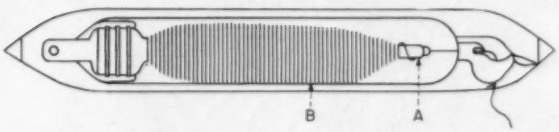
Each size of zipper used at Ideal has to be sewed with a special cord, one of S twist and one of Z twist. The cords keep the tape from twisting so that it holds a flat shape.

The cords are sewed to the zippers on standard-model sewing machines. The main job of an operator of the machines is to creel the yarn for several machines. Except for creeling, the machines are fully automatic.

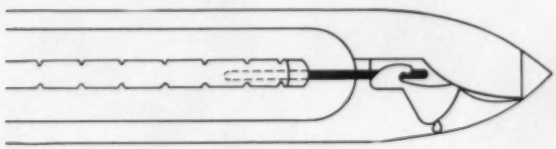
The longer cord made on the twister winder results in less creeling, less rethreading, better stitching, and longer needle life.



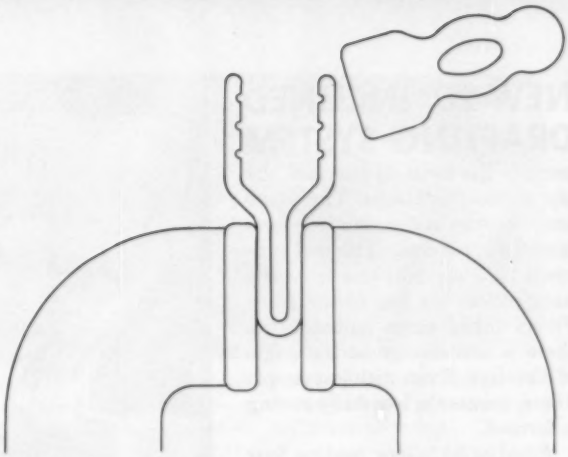
QUILL too low in the shuttle causes filling breakage at *A* and chafes and weakens the yarn at *B*.



SPRING that is weak or crooked causes tension and filling breakage at points *A* and *B*.



GAUGE is a small rod that fits a hole in the quill and slides into the shuttle eye if the quill is aligned.



VISE holds the spring while the jaws are being aligned. Strike them with a light hammer.

Many SHUTTLE-SPRING *Problems Are Caused by Large Packages*

The heavier packages of filling yarn being used today cause extra stress and wear to shuttle springs. A weak or worn spring causes—

- **Broken picks**
- **Kinky filling**
- **Filling bands**
- **Loss of production**

By WILMER C. WESTBROOK, Assistant Editor, TEXTILE WORLD

COTTON MILLS changing from 8-in. to 8¾-in. quills have invariably noted an increase in cloth defects such as broken picks, kinky filling, and filling bands. Shuttle springs need more-frequent inspection and replacement to prevent these defects. Mills using quillers to pack more yarn on the quills have trouble keeping the shuttle springs straight and tight.

The problem, of course, is caused by the extra length and weight of the quill. The entire weight of the quill is supported by the spring, which grips the three rings at the butt of the quill. Since the quill is supported at only one end, any addition of weight, whether it is more yarn or added length of the quill, places more strain on the holding surface.

Vibration Causes Wear

But a factor that causes more trouble than the weight of the quill is vibration. When the shuttle is picked in the loom and stops in the opposite shuttle box, the quill vibrates from the shock. Naturally the longer or heavier the quill, the greater will be the strain of this vibration on the shuttle spring.

Systematic inspection and maintenance are the best ways to combat troubles caused by shuttle springs. The springs should be kept tight, and they should be tightened straight. If the spring is high or low, if one jaw of the spring is weaker than the other, or if the spring is not seated straight in the shuttle, the end of the quill is not held in line with the shuttle eye.

A slight misalignment of the quill can cause broken picks or kinky filling in the cloth. A simple gauge can be used to check the alignment of the quill to the shuttle eye.

If the spring is tight and not worn but the quill is not aligned, check the quill. It may be warped or have loose rings. A high or low quill can usually be corrected by bending the spring cover. A side adjustment can be made by bending one or both of the jaws of the spring. Care must be taken not to close the jaws too much; if the quill becomes hard to seat, damage will be caused when the filling is replenished.

Don't Use Worn Springs

A simple hand test determines if the spring is gripping the quill with the correct pressure. If the tension is correct, a quill can be inserted in the shuttle with pressure exerted by the heel of your hand. If there isn't enough tension, the quill can be rotated in the spring with your fingers.

Remove the spring and spring cover before you try to bend them because prying or hammering will damage the shuttle. Install a new spring if the slots are worn. It is poor economy to tighten the spring jaws to compensate for wear. Your best bet is to have a rigid inspection and maintenance program that will keep all the shuttle springs tight and straight.

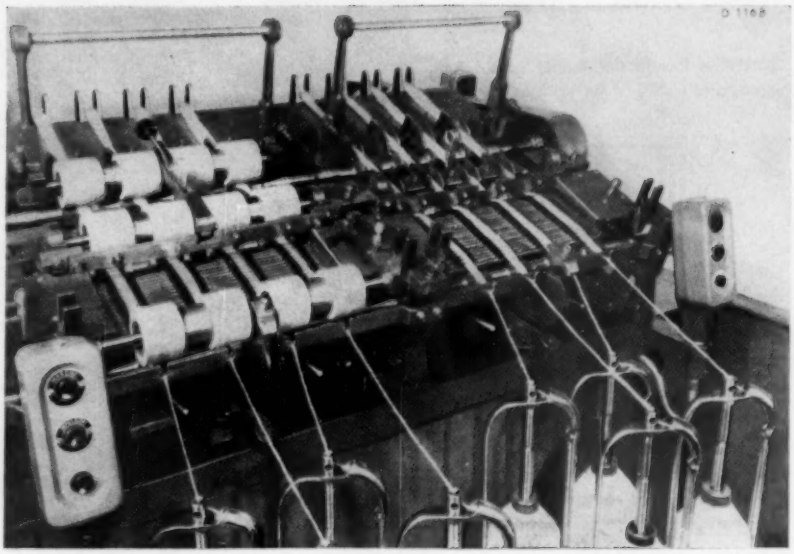
NEW 20° INCLINED DRAFTING SYSTEM

permits the twist to run into the nip of the front rolls. The fibers are always under control and lapping is reduced. The end proceeds on a straight line from the back roll to the top of the flyer. Fibers blend more smoothly as there is less change in the angle of direction. Even with less supple fibers, a smooth, less fluffy roving is formed.

A bed of 30 fallers, feeding four spindles, exercises the necessary control on the individual fibers to insure a steady flow of material to the front roller with regular distribution of the short fibers throughout the mass.

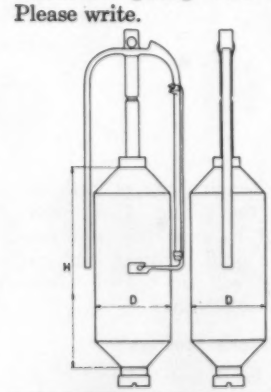
The drafting unit remains open for observation and easy cleaning. Doublings of 1 to 3 and drafts from 5 to 15 may be obtained with the single drafting zone. Drafts up to 30 are accomplished with the double drafting zones.

Machine cut gears, ball bearings and self-lubricated footsteps are some of the many features assuring a smooth, quiet operation. We will be glad to send you literature giving full details. Please write.

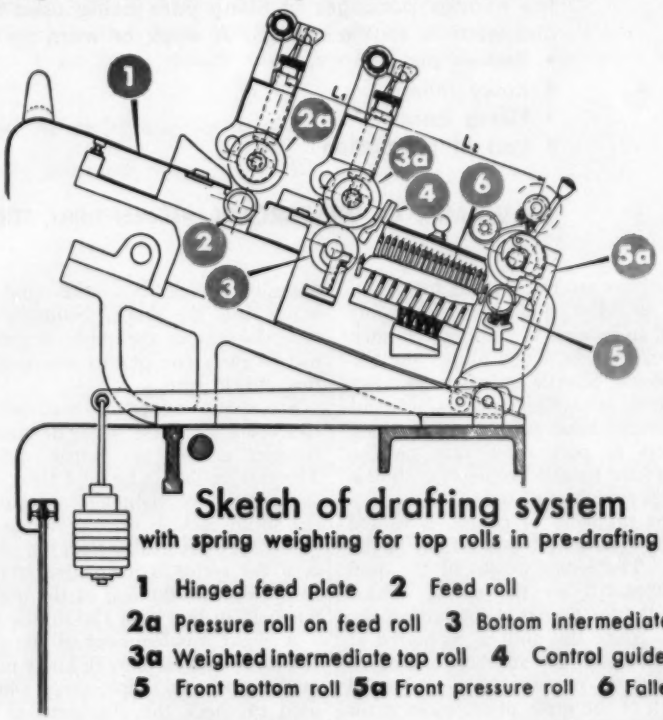


NEW SACM Cone Gill Rover for worsted and synthetic fibers

This new SACM gill rover saves several drawing operations while producing an even twisted roving from an untwisted sliver.



L_1	Pre-drafting zone 80 mm < L_1 < 210 mm (approx. 3-1/8") (approx. 8-1/4")
L_2	Drafting zone with pinned faller control L_2 = 215 mm (approx. 8-1/2")
H	Traverses 250 and 300 mm (approx. 9-7/8" and 11-13/16")
D	Diameter of full bobbin 120/126 mm (approx. 4-3/4" to 5")



Sketch of drafting system
with spring weighting for top rolls in pre-drafting zone

1 Hinged feed plate **2** Feed roll
2a Pressure roll on feed roll **3** Bottom intermediate roll
3a Weighted intermediate top roll **4** Control guide
5 Front bottom roll **5a** Front pressure roll **6** Fallers

ATKINSON, HASERICK & CO., INC.
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WORLD'S LEADING TEXTILE MACHINERY
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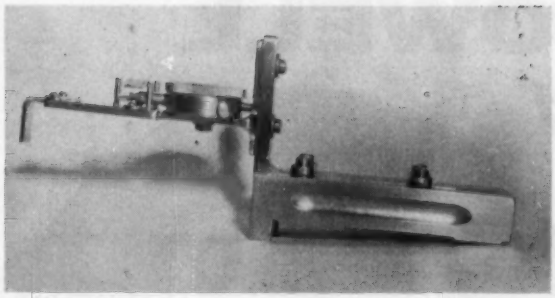
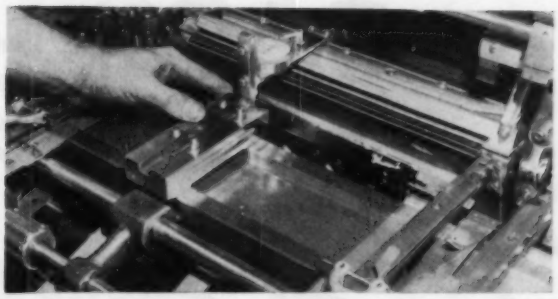
← For more data, write this page number on Reader-Service card.



VERGE PLATES can be set accurately with the dial-indicator instrument from the surface of the gauging table. Difficult-to-detect faults are easily found.



DIAL INDICATOR is mounted on the regular table gauge. The 90° bend at the end of the tongue contacts the verge-plate surface. The tongue is held to the dial gauge by springs.

On Full-Fashioned Machines—

Set VERGE PLATES With a Dial Indicator

• This method of gauging verge plates and keeping sinker play to a minimum helps fine-gauge full-fashioned machines to knit a clear stitch

By J. C. **BAUMGARDNER,** Lee Hosiery Mills, Inc.

MINIMUM SINKER PLAY BETWEEN THE SLUR CAMS AND THE VERGE PLATES of full-fashioned hosiery machines must be maintained to knit a good clear stitch free from cloudiness, fish eyes, and other distortions. Because of normal wear, verge plates on 60-, 66-, and 75-gauge machines must be replaced at regular intervals.

Machine builders' gauges for replacing verge plates are not suitable for our use because two must be used and they are very thin. We also find the space for gauging the verge plate and the sinker head is limited; so we use a dial indicator mounted on a universal table to do the job.

New Method Is More Accurate

We find that this method of gauging verge plates can be done with greater accuracy, and the entire width of the verge plate may be gauged after tightening. This method shows any unevenness across the width and sometimes shows up a verge-plate wearing surface that has been dressed unevenly. This latter fault is difficult to detect by other methods.

The dial gauge we use measures in units of 0.001 in., and it is mounted rigidly to the table gauge. The table gauge has a sliding tongue held in contact with the dial gauge by springs, which are strong enough to hold the sliding tongue against the contact point of the dial when it is fully depressed.

The sliding tongue fits into a groove in the table gauge. A 90° bend at the end of the tongue contacts the verge-plate surface.

The springs on the sliding tongue will hold the end of the tongue in contact with the verge-plate surface. The spring built into the dial gauge will accurately measure any variation at either side of the verge plate or across the verge-plate width.

How To Use the Dial Gauge

You can use the machine-builder's gauges to place the verge plates and then follow up with the dial-indicator gauge. You can also place a few verge plates with the machine builder's gauge, calibrate the dial-indicator hand to zero, and replace the remaining verge plate with the dial gauge.

The dial gauge must be calibrated for each machine. This job can be done by loosening a screw on the side of the gauge and turning the face until the dial hand lines up with zero.

When the verge plates have been replaced, turn the slur-cam adjusting screw to move the slur cams back so the slur cam, jacks, and sinkers don't bind against the verge plate when the machine is first turned.

Turn the machine by hand until a few sinkers are all the way out, and then turn the slur-cam adjusting screw until the sinkers held forward by the slur cam and jacks have a maximum back-and-forward movement of 0.002 in.

Turn the Machine by Hand

When this is done on each knitting section, turn the machine by hand until 4 or 5 ins. of sinkers have been moved forward. Check the play of the sinkers between the slur cam and verge again.

If the play is more than 0.002 in., move to the next section. If there is no play, move the slur cam back slightly.

When each section has been checked in this manner, turn the machine by hand until about two-thirds of the sinkers are moved forward. Then repeat the procedure and turn the machine until only one or two sinkers are not moved forward, and repeat the check.

The next procedure is to check the jack heads for unevenness. You can turn the machine by power and check each section at each side for exces-

CONTINUED ON PAGE 200

THE SACO-LOWELL

Fancy Roll

- **Increases production**
- **Reduces loading**
- **Improves quality**

RUNNING SYNTHETICS, BLENDS, WASTY COTTON?

The Saco-Lowell *Fancy Roll* causes a worthwhile increase in production by eliminating the need of stopping and stripping at frequent intervals. For either flat or roller top cards, the Saco-Lowell *Fancy* improves quality by preventing loading of the cylinder. Carding is helped by the *Fancy* when running nylon and other synthetics, blends, or cotton with a high percentage of waste.

Today's intense competition means that pennies per pound makes the difference between profit and loss . . . the *Fancy* is another Saco-Lowell cost reducing essential which helps you make a profit.

Remember, too, the Saco-Lowell *Fancy* cannot be matched for quality of workmanship or design because it is properly engineered by the same design staff, manufactured by the same skilled technicians, in the same shops that produce the entire card.

The *Fancy* is "in stock" for most cards and is available for immediate delivery at a competitive price.

For short staple lengths —
THE CONTINUOUS STRIPPER

This unit is designed to do the work of the Fancy on cotton and some synthetics where fibre length is not over 1-9/16". For these shorter staples the CONTINUOUS STRIPPER remains the finest stripping device.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

How To Plan for Arbitration

• The right kind of advance preparation can make the difference between winning and losing a case that goes to arbitration. Here's a look at the supervisor's part in arbitration and how he can bolster his company's case through proper planning before the hearing.

By **M. A. CROSS,** Director of Industrial Relations, Dan River Mills, Inc.

Under the majority of union contracts in the textile industry, employee grievances that cannot be settled in the various steps of the grievance machinery are resolved through arbitration. The contract clauses covering arbitration vary greatly; but in principle they provide that an impartial umpire, or board of umpires, will make a binding decision on a grievance involving the interpretation or application of the union agreement.

The actual process of presenting a case at arbitration may not be your responsibility as a supervisor, but it is your responsibility to contribute in every way possible to the successful outcome of the arbitration case when your actions and decisions are directly involved.

Your contribution can be more effective if you are familiar with the arbitration procedure and know some of the pitfalls that may be encountered. Here are a few points you will want to consider when arbitration is imminent. For the supervisor in the unorganized plant, they may suggest some of the problems inherent in an operation that is unionized.

1. To Arbitrate or Not To Arbitrate?

This decision is the first that has to be made, and frequently it is not an easy one. It's a rare individual who can predict with 100% accuracy how an arbitrator will decide an issue placed before him. Where a reasonable relationship exists between company and union, the case cited to arbitration usually involves a grievance in which there is some merit on both sides of the argument. Trying to evaluate, not from your standpoint but from the arbitrator's, which side has the greater merit becomes an exercise in prophecy.

You have to weigh such considerations as these:

Is there a principle at stake in this grievance that management must defend at any cost? How has the arbitrator decided similar cases in the past? Is the union arbitrating primarily for political reasons and out of concern for a favorite member or group of members?

Was the management decision involved in the grievance consistent with the contract and with past practice? Will the arbitrator's decision, if unfavorable, create a precedent that will handicap you in the future? Is the issue important enough that arbitration must be risked, even if an unfavorable decision is probable?

These questions and others that fall largely in the area of management policy must be answered, in addition to the basic problems of the strengths and weaknesses in your position, to decide whether or not to arbitrate.

2. It Takes Teamwork

No matter who is to present the company's case in arbitration, it takes teamwork for an effective presentation. Most arbitrations do not depend exclusively on legalistic arguments presented by opposing attorneys representing the company and the union. They must argue, all right; but they must argue in the light of facts revealed by testimony offered by witnesses.

A recent study of arbitration cases established that the largest number of those examined involved discharge or other disciplinary action. In such cases, argument about the meaning of the union contract is less important than the facts that caused the supervisor to impose the disciplinary action. Here testimony of supervisors is all important.

Similarly, in an issue over workloads or incentive rates, the facts marshaled by the timestudy man to support the company's position are generally the key to the arbitrator's decision.

The chief spokesman for the company, in planning his strategy, needs all the information at the command of supervisors. He must be well armed with facts and must depend on witnesses who are convincing.

Actually, it is a team that presents the case for the company; and as members of that team, supervisors, timestudy men, and others must work together in every phase of planning and in the presentation at the arbitration hearing itself.

3. Know Your Strong Points

Certainly you would not be going to arbitration at all unless there were some strong points supporting your position. The company spokesman will want to emphasize these points at the hearing and will want to pre-

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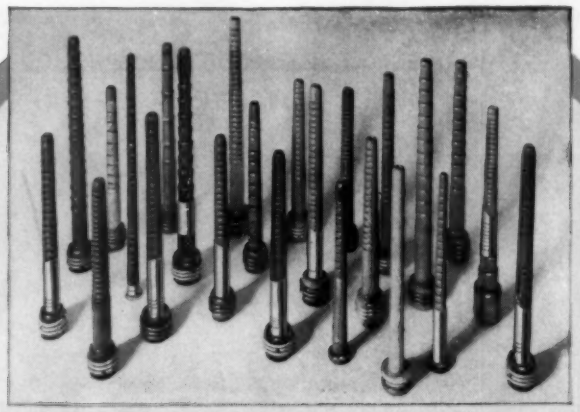
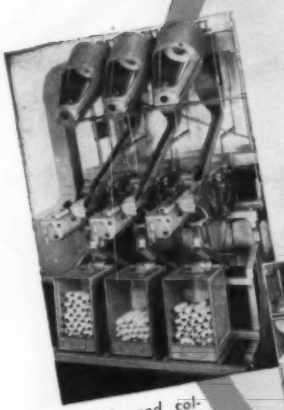
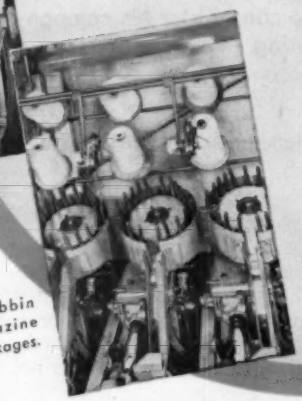


A few of the many types and sizes of filling bobbins that can be profitably run on the Fill-Master Winder.



Exhaust hoods and collectors for mills having dust and fly in winding area.



Multi-cell empty bobbin magazine for magazine creeling or single packages.

Packing device for orderly, clean storage of filled bobbins.

Pin boarding arrangement for synthetic yarns.

Only the Whitin-Schweiter FILL-MASTER* Filling Winder Gives you such Complete FLEXIBILITY and ADAPTABILITY

Whitin-Schweiter Fill-Master Winder with Bobbin Loader*

Flexible . . . . for fully automatic winding of cotton, wool, worsted, synthetics and blends.

Adaptable . . . to a broader range of mill requirements than any other winder thru its complete line of optional accessories (see illustrations)

These are only two of many outstanding advantages, including:

- Machine speeds up to 10,000 R. P. M.
- Speed of individual spindles adjustable
- Bobbins up to 10⅛" • Tail-less bobbins
- Variable layer locking traverse prevents sloughing
- Maintains uniform winding diameters, resulting in more yardage per bobbin

*Trade Mark

Whitin MACHINE WORKS

WHITINSVILLE, MASS.

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Manufactured by **WHITIN** *for sale in U. S. A. and Canada*

and by **SCHWEITER, LTD., Horgen (Zurich, Switzerland)** *for sale in other countries*

Controlled-Needle Tufting Machine

A controlled-needle bedspread and rug tufting machine has been announced by Cobble Brothers Machinery Co., Riverside Dr., Chattanooga, Tenn. The machine makes an overlaid cut-pile pattern up to 61 ins. wide on a low-nap ground tufted in a previous operation.

The resulting product has a rich and luxurious appearance. However, the weight of the yarn is low; and the extra tufting operation does not materially affect production cost because of the high rate of production and the resulting low labor cost. An average of 133 bedspreads can be tufted each 8-hr. shift.

The machine also makes carved throw rugs in cut-pile designs in a single pass of the machine. The carved-design scatter rug shown in the accompanying photograph has the carved lines filled in by single-needle operation with metallic-stranded yarn.

In both bedspread and rug production, needles are taken out of operation automatically by a pattern control and they do not penetrate the cloth at these points.

There is a control for every two needles in the machine, and all curves and other lines in the patterns are made in two-needle steps, which give smooth designs.

With the machine, textured effects are possible that have previously been limited to loop-pile fabrics.

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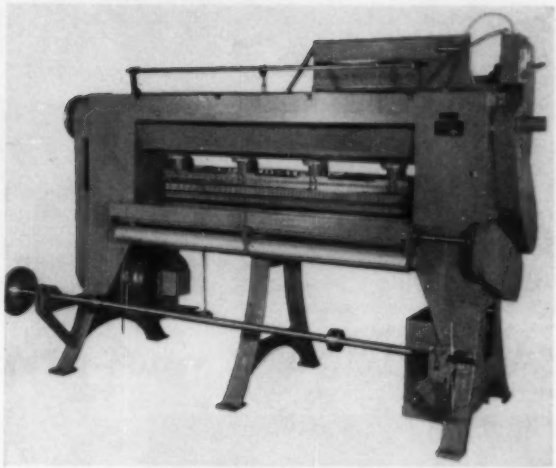

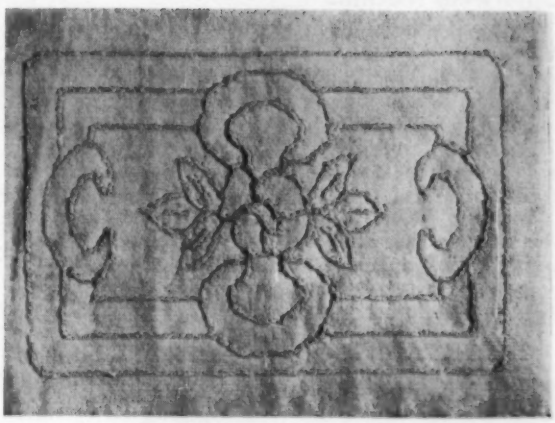

Tubular-Cord Knitter

A machine that knits tubular cord faster than 1,200 courses per minute is being marketed by Oswald Donner & Co. Ltd., Kilmarnock, Scotland. The machine dispenses with the orthodox camming system, and it uses a stationary conical needle holder that works with extra-long needle stems.

The needle shanks are turned at right angles to the stem and pass through holes in a bottom ring. A simple gear arrangement drives the ring. This ring is positioned at an angle and is oscillated by the inclined flange of a rotating boss.

The flange lies in a ball race and gives the needles their motion at each revolution of the machine. Quality changes are made by raising or lowering the knitting cylinder.

Yarn is fed to the needles by a yarn guide attached to a rotating disk above the needle cylinder. The disk receives its motion from a gear synchronized with the cylinder drive.

There are no holding-down sinkers and no latch guide. Speed variations are obtained by changing pulleys. Three needle holders are available with each machine. Each holder has 8, 12, or 16 slots; but the loop size remains about the same for each holder.

Verge bits on the holders allow knitting to commence without running on fabric, and the verge bits are the same distance on all holders. Partial needle set-outs can be used to produce tubular strappings with as few as four wales. Bradford worsted yarn numbers that can be run range from 2/32s to 4/16s.

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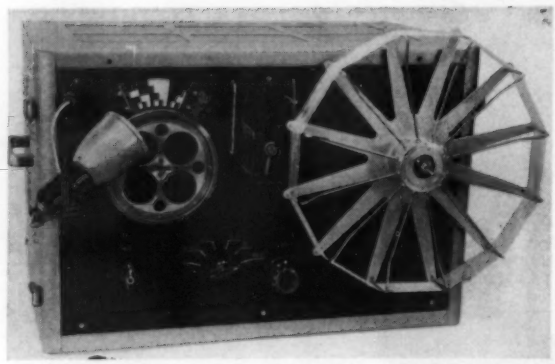


High-Speed Rewinder

A high-speed rewinder announced by Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C., makes yarn tests possible at speeds up to 1,000 yds. per min. The instrument, with winding speeds of 250, 500, 750, and 1,000 yds. per min., reduces testing time to a minimum on the Uster evenness tester and increases the spectrum analyzed on the Uster Spectograph from 10 to 100 yds.

The rewinder is designed as an independent unit to be placed below the evenness tester. The unit has thread guides to distribute the yarn evenly on the reel to keep constant tension on the yarn. A stroboscopic measurement keeps the speed of the yarn within 1% tolerance.

Winding speed may be checked on the stroboscope before testing is begun. Tension on the yarn is regulated by a servo-stop motor. With this control, the rewinding speed of 1,000 yds. per min. is reached 5 secs. after starting the unit.

Circle T-3 on Reader-Service Card

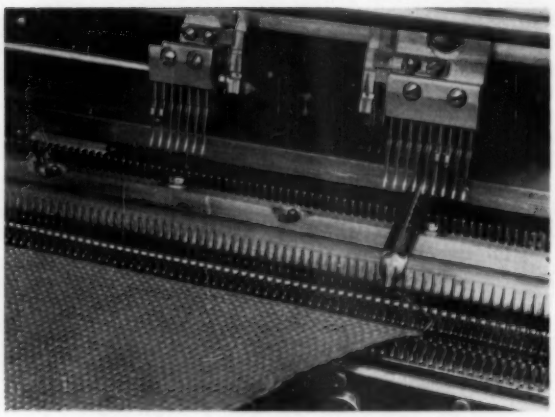
Outerwear Machine

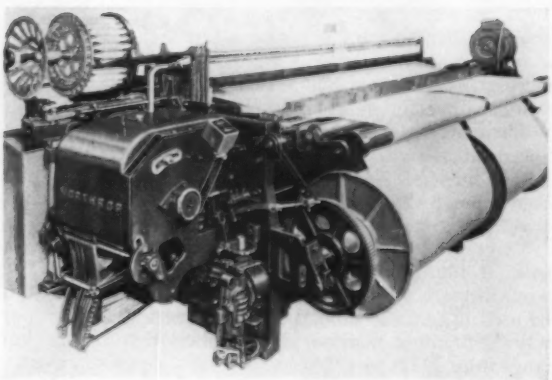
Full-fashioned knitting machines by Textile Machine Works, Reading, Pa., are now made in coarse gauges suitable for bulky-knit outerwear garments.

The entire cam motion for the coarse-gauge machines has been redesigned to facilitate proper knitting action. The motions for narrowing and widening the fabric where minor difficulties tend to be accentuated because of the coarse gauge have been redesigned.

The new machines incorporate all standard features of the Reading machine, including four yarn-carrier rods. A striping attachment is available and is limited to two automatically operated carriers, depending on the type and yarn number to be knitted.

Circle T-4 on Reader-Service Card





Automatic Loom

A topless high-speed automatic loom has been announced by Northrop Loom Co. Ltd., Blackburn, England. The loom is designed to weave fabrics from cotton, wool, worsted, rayon, and man-made fibers.

Called the Model MRT, the loom is built in sizes to give a reed width of 41½ to 91½ ins. It can be built as a single-shuttle loom, with box motions for two- or four-box check work, or for continuous two-box mixing.

The loom can be obtained with a positive side cam shedding motion or with a dobby head motion. A choice can also be made between a rotary filling magazine or a vertical magazine.

Because of the absence of superstructure and the low mounting of the dobby or cam shedding motion, the loom has a low center of gravity. A heavy frame with cross-girts and extra crank-shaft bearings permit high speeds without excessive vibration.

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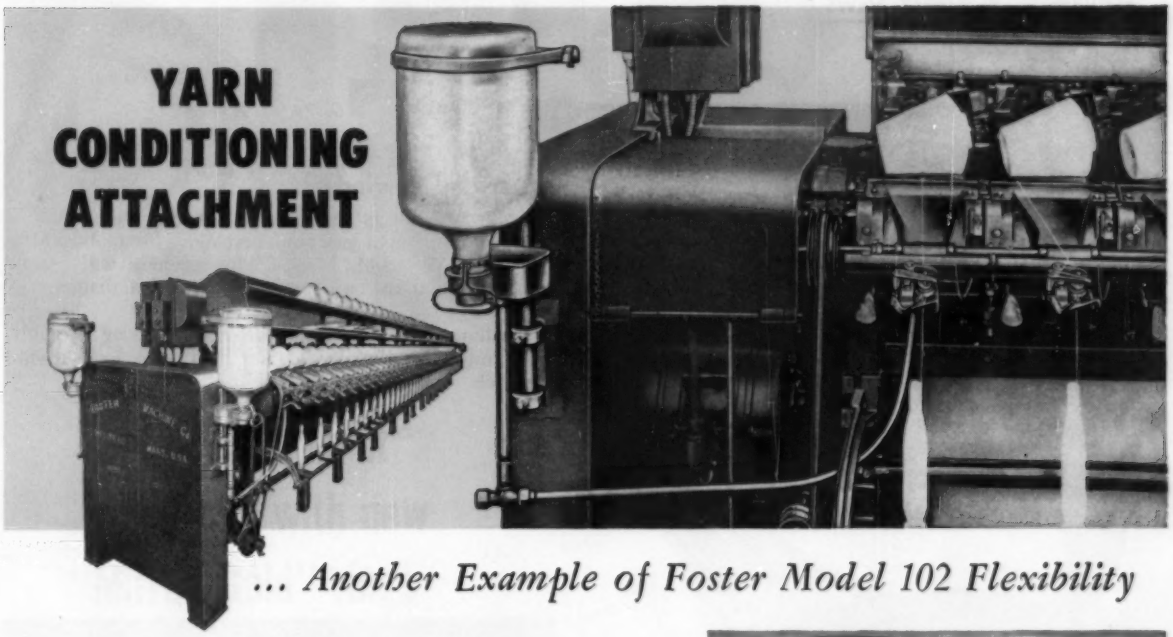
YARN CONDITIONING ATTACHMENT



... *Another Example of Foster Model 102 Flexibility*

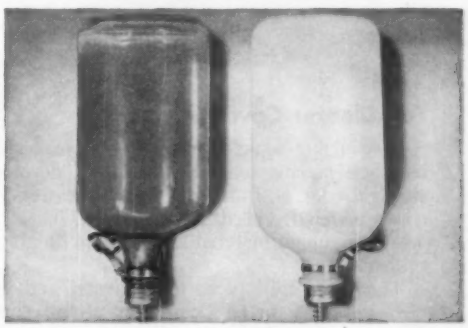
This flexibility feature of the Foster Model 102 Winder is particularly important, because some types of winders can not use yarn conditioning attachments.

This attachment lubricates and softens yarns with a wax or oil emulsion. It restores normal moisture content and gives the yarn a soft hand, so that it will run well in the knitting machine and reduce needle breakage.

Readily applied to existing machines, or supplied with new machines, it is particularly useful when winding mercerized yarn or package dyed yarn. It can condition any type of yarn at any speed within the capacity of the machine — up to 750 y.p.m. It also permits numerous variations in percentage of moisture pickup.

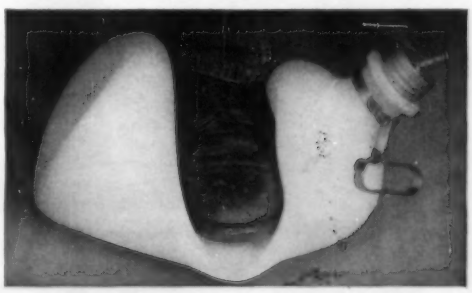
Other flexibility features of the Foster Model 102 are: — 1. Handles any type or count of staple yarn except the coarsest. 2. Produces any cone taper commonly used and any angle of wind from 9° to 18°, with simple and inexpensive changes. 3. Can be equipped to wind knitting cones, warping cones, parallel tubes, dye packages or short traverse cheeses. 4. Winds dyed yarn, even when damp. 5. Can be built to wind up to 7" traverse.

Who knows what you'll be winding a few years from now? Be prepared for the unforseen insofar as possible. Get all the facts about the Foster Model 102. Send for Bulletin A-95 now.



GLASS PLASTIC

PLASTIC BOTTLES now available for Foster Yarn Conditioning Attachment. Weigh only 2 lbs. ½ oz. Glass bottle weighs 6 lbs. 15½ oz.



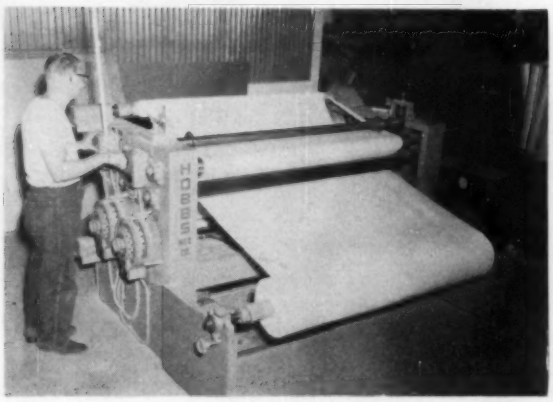
UNBREAKABLE. Does not shatter, if dropped. Lasts indefinitely; eliminates accidents; pays for itself many times over.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U. S. A.
Southern Office — Johnston Bldg., Charlotte, N. C.

A Winder for Every Textile Purpose

Canadian Representative—Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.
European Representative—Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England



Slitter and Rewinder

Nonwoven fabrics can be trimmed and slit up to 750 yds. per min. on a machine developed by Hobbs Mfg. Co., Inc., Westfield, Mass. The machine will handle rolls up to 60 ins. wide with a maximum diameter of 30 ins.

Machine elements include the let-off, slitting assembly, drive rolls, batching unit, and two cable-lock rewind mandrels.

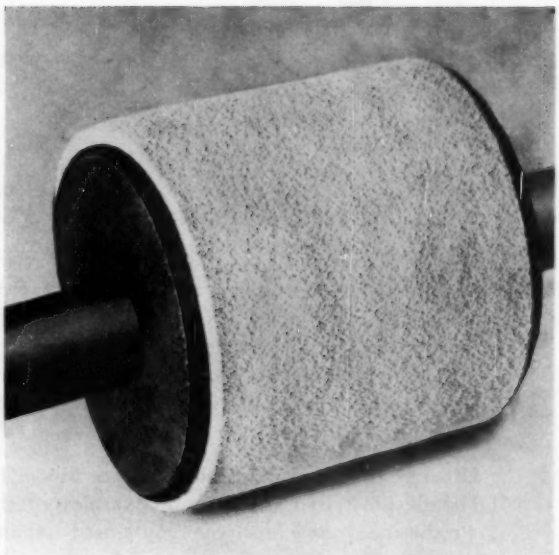
Circle T-6 on Reader-Service Card

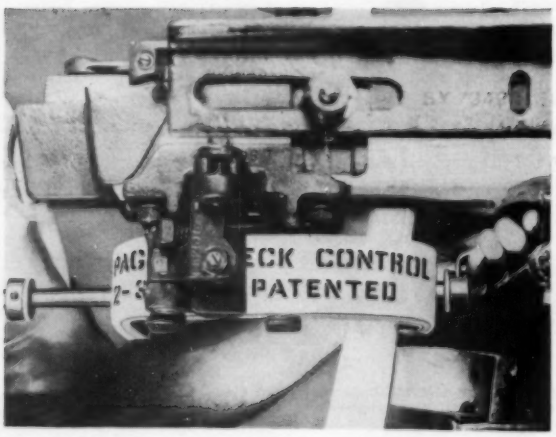
Top-Clearer Cover

A revolving top-clearer cover that makes it possible to lengthen picking schedules has been developed by Armstrong Cork Co., Industrial Div., Lancaster, Pa. The new cover material, called Accotex NK-770, is an expanded synthetic-rubber material that is more durable than sponge rubbers.

The cover collects waste efficiently and uniformly and does not have to be cleaned as often as regular covers. The waste usually comes off in one piece when cleaning is necessary.

Circle T-7 on Reader-Service Card





Loom Check Control

A check control for looms has been announced by Page Belting Co., Concord, N. H. The control is said to require less time to install and adjust than conventional check-straps and will give uniform checking action over a long period of time.

The check controls have given good results on XD, X-2, XX, XP, XP-2, XL, S-5, S-6, and other model looms in actual production tests.

Circle T-8 on Reader-Service Card

RINGS

DRAPER "MIRROR-GOLD"

Improve break-in schedules with new "Mirror-Gold" rings

Mill tests prove that the new *"Mirror-Gold"* ring improves break-in schedules while *retaining all the advantages* of the famed DRAPER mirror-finish ring.

Identified by its golden color, this new ring increases Traveler life and reduces ends down.

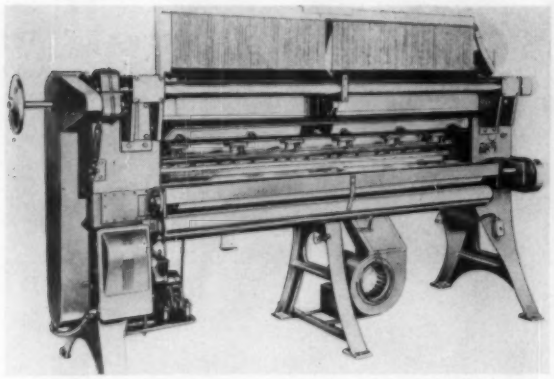
For the maximum in ring economy, performance and service . . . specify DRAPER *"Mirror-Gold."*

DRAPER CORPORATION

Hopedale, Mass.

Atlanta, Ga.
Greensboro, N.C.
Spartanburg, S.C.

For more data, write this page number on Reader-Service card. →



Tufting Machine for Throw Rugs

A tufting machine announced by Cobble Brothers Machinery Co., Riverside Dr., Chattanooga, Tenn., makes throw rugs in contrasting areas of alternate cut pile and uncut loop pile, as shown in the accompanying photograph. Every other needle in the machine is set to make loop pile, and alternate needles are set to make cut pile.

The machine also has the manufacturer's pattern attachment to control the yarn fed to the loop-pile needles and an auxiliary yarn feed to feed yarn to the cut-pile needles. The cut pile is of uniform height and is next to the high and low pile run on the loop needles controlled by the pattern attachments. Pattern possibilities are unlimited.

The high loops in the loop-pile area cover the cut pile, and the cut pile covers the loops in the contrasting area. Usually the cut pile is run in solid color and the loop pile is a harmonizing tweed.

Only a single needle bar and a single hook bar are used; and the mechanism is as easy to reach and service as a plain cut-pile machine.

Circle T-9 on Reader-Service Card

Sectional Warper

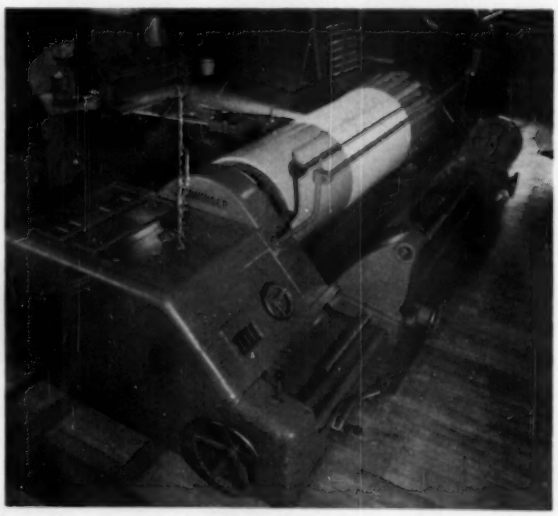
A sectional warper made by Benninger Engineering Co. Ltd., Uzwil, Switzerland, is being sold in the U.S. by H. J. Theiler Corp., Ashmont Ave., Whitinsville, Mass.

The warper has a small enclosed drum suitable for handling all types of fibers. The warping speed is variable by push-button control within two ranges. One range is 27 to 164 yds. per min., and the other is 148 to 875 yds. per min.

The warper has a simple leasing device that enables the threads to be easily divided for insertion of lease cords. A choice of counters for four yardage lengths is available.

The warper's beaming appliance also has push-button-controlled variable speed. The beaming appliance is built for beam flanges up to 24 ins., or to 31 ins., as required. A large number of accessories can be obtained with the warper in addition to standard equipment.

Circle T-10 on Reader-Service Card



Low-Voltage Switchboard

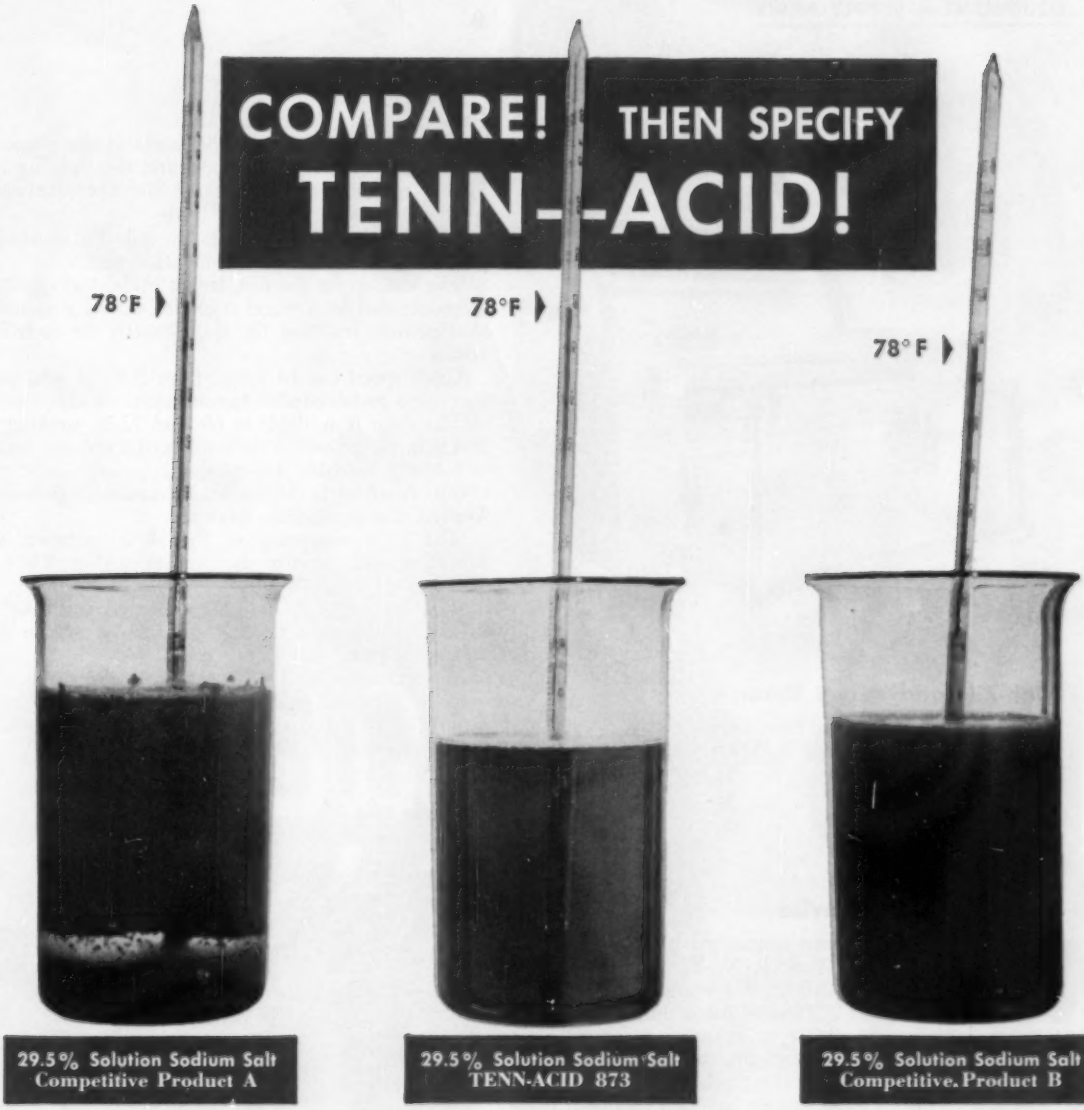
A low-voltage switchboard built in standardized modules for application versatility has been announced by General Electric Co., Plainville, Conn. The switchboard is designed for incoming service of 600 v. or less. Its mains are 800 through 4,000 amps.

The switchboard, Type DR Universal, has drilled structure and bus bars for virtually any combination of seven different low-voltage protective devices.

All bus bars, connection straps, and cable lugs in the switchboard are silver plated. The bus bars are supported on nontracking molded glass-fiber insulators of high-impact and dielectric strength.

Circle T-11 on Reader-Service Card

COMPARE! THEN SPECIFY TENN-ACID!



29.5% Solution Sodium Salt Competitive Product A

29.5% Solution Sodium Salt TENN-ACID 873

29.5% Solution Sodium Salt Competitive Product B

TENN-ACIDS are base detergent acids that can be neutralized to yield concentrated, low cloud point Inorganic or Organic Salts which function as highly effective detergents and wetting agents for natural and synthetic fibers.

CONDITIONS OF TEST

This is an unretouched photograph showing actual tests which resulted when TENN-ACID 873 was compared to the competitive products of two of the largest surfactant suppliers in the country.

Investigate the merits of these new inexpensive raw materials designed specifically for the Textile Industry.

Send me further information on **TENN-ACIDS**

Name_____

Company_____

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MARKETING RESEARCH AND DEVELOPMENT DEPARTMENT

TENNESSEE TC CORPORATION

1330 West Peachtree—Suite 500—Atlanta, Ga.
Phone: TRinity 5-6616

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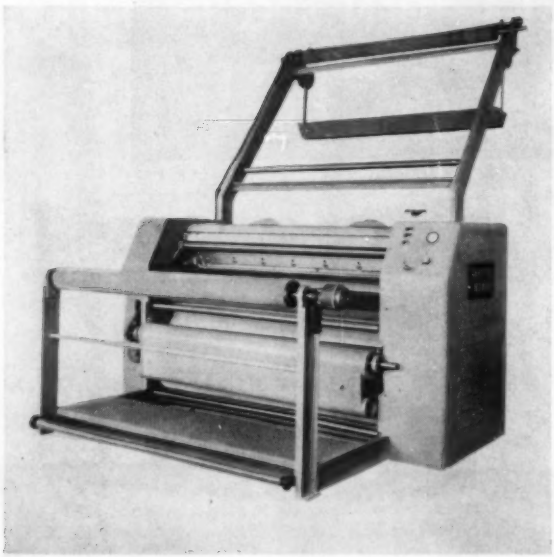


High-Pile and Velvet Shear

A shear that will handle fabrics with $\frac{1}{8}$- to $\frac{1}{2}$-in. pile has been developed by Curtis & Marble Machine Co., 72 Cambridge St., Worcester, Mass.

A movable rest presents the fabric at the proper angle to the edge of the ledger blade, and the shearing is done by the revolvers as they engage the fibers between the spiral cutters and the ledger blade.

A variable-speed brush lifts the pile for shearing as it passes under tension to the movable rest.

The settings for the rest, ledger blade, and spiral cutters are controlled by a wheel regulator with a numbered dial that permits resetting the shear exactly for each style of fabric.

Cloth speed can be varied from 8 to 24 yds. per min. through a variable-speed transmission.

The shear is available in 60- and 72-in. working widths and is furnished with a cloth-roll feed stand and back arms. A folder is available if wanted.

The machine is engineered to handle both woven and knitted man-made-fiber fabrics.

The rigid mounting of the shear cylinders reduces vibration and permits shearing to within 0.004-in. accuracy.

The shearing cylinders are mounted vertically, which allows the operator to check all phases of the shearing operation from one spot.

A variable-speed drive provides cloth speeds of 5 to 65 yds. per min., and the cylinder speeds may be varied from 500 to 1,500 rpm. Standard machines will accept fabrics up to 63 or 78 ins. in width.

Circle T-12 on Reader-Service Card

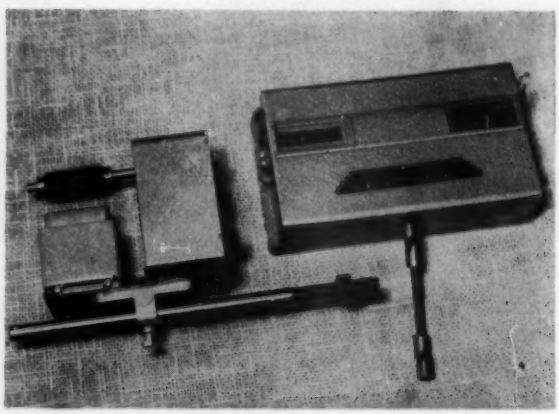
Warp-Measuring Device

A warp-measuring device announced by Trumeter Co., 38 W. 32nd St., New York 1, N. Y., is for measuring and marking warps on slashers and beaming machines.

The unit consists of a standard batch unit coupled to a suitable roll on the slasher or beaming machine. The marking device coupled electrically to this unit is placed on an adjustable rod across the machine.

Each time the required yardage has been wound or processed, an electrical impulse to the magnet in the marking device automatically marks the yarn by depressing the top roller onto a second felt-covered roller, which is immersed in dye.

Circle T-13 on Reader-Service Card



Solid-Color Hosiery Machine

The M-CK solid-color pattern knitter built by H. E. Crawford Co., Inc., Kernersville, N. C., has a positive-controlled shogging clutch. The cylinder can be shogged three needles, any multiple of three needles, or a complete revolution if desired.

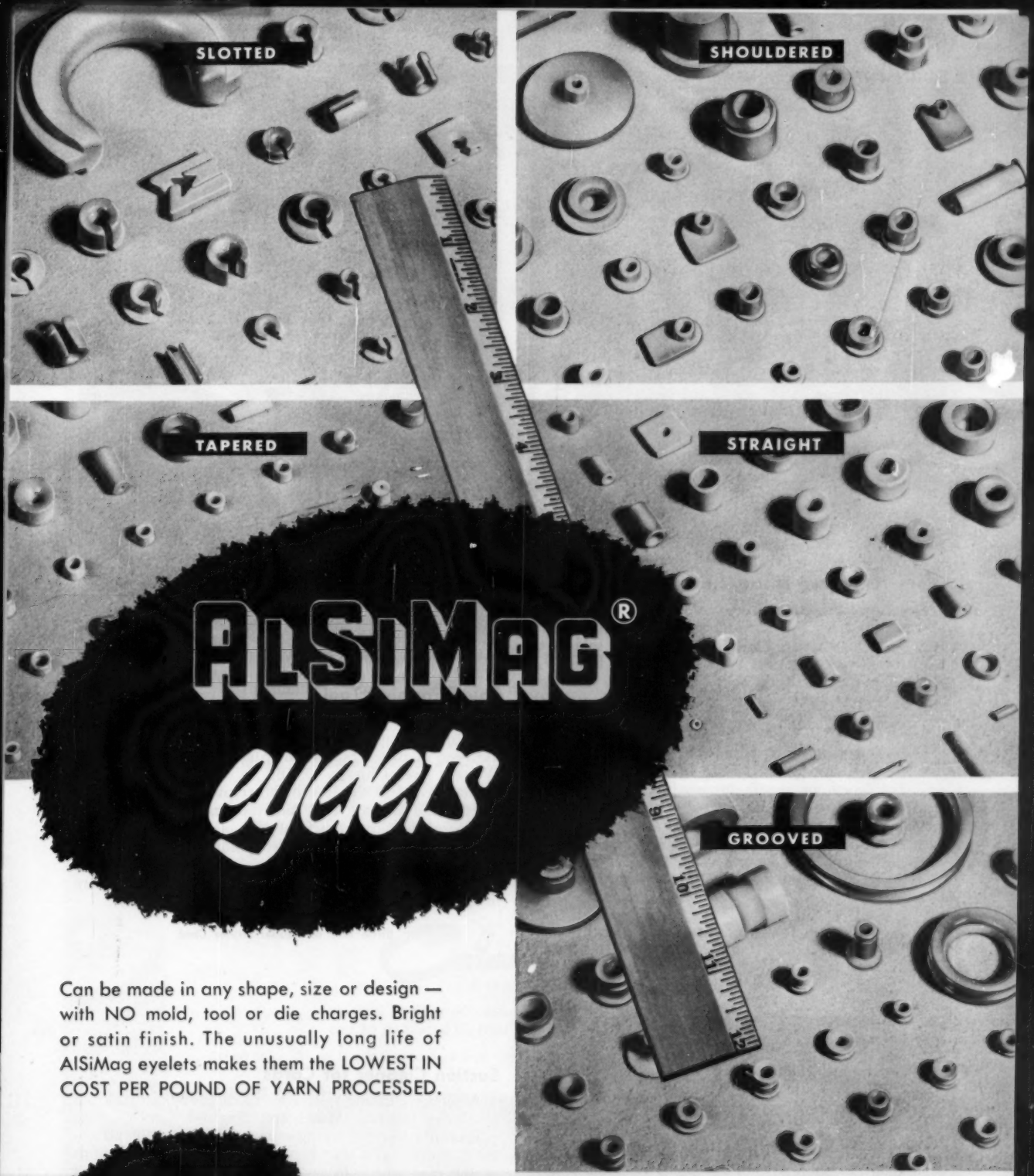
A needle selector starts a pattern section at any desired position around the needle cylinder. The lifter and dropper controls allow any desired number of needles to be put in or out of action on either side of the pattern area to knit various-shaped solid-color patterns.

In changing from one yarn color to another color, both loose ends are positively controlled and placed on the inside of the sock by a rotating air device. This method eliminates the trimming of loose ends of yarn or picking out yarn that is knitted across other colors in the pattern area.

An automatic yarn release places all ends of yarn in a positive position for the rotating air device to place all ends of yarn on the inside of the sock.

An attachment for making stripes in the top or any part of the sock during rotary knitting is optional. Crawford AA machines can be equipped with the above features.

Circle T-14 on Reader-Service Card



AlSiMag® eyelets

Can be made in any shape, size or design — with NO mold, tool or die charges. Bright or satin finish. The unusually long life of AlSiMag eyelets makes them the LOWEST IN COST PER POUND OF YARN PROCESSED.

TEST SAMPLES AVAILABLE

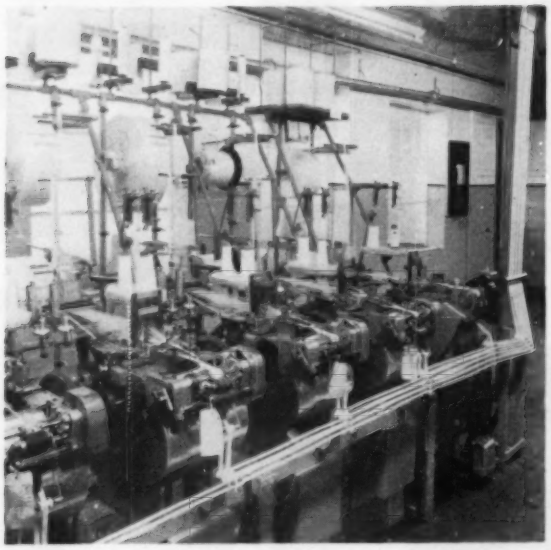
56TH YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

A Subsidiary of Minnesota Mining and Manufacturing Company

CHATTANOOGA 5, TENNESSEE

SALES ENGINEERS: NEW ENGLAND: W. J. Geary, 27 Fairlawn St., Cranston, R. I., Williams 1-4177. NORTHEAST: J. S. Gosnell, 205 Walnut St., Livingston, N. J., 6-1260. NORTH CENTRAL: Minnesota Mining & Mfg Co., 367 Grove St., St. Paul 1, Minn., Cedar 3071. NORTHWEST: Minnesota Mining & Mfg. Co., 320 Shaw Road, S. San Francisco 10, Cal., Plaza 6-0800. SOU. CAL.: W. L. Thompson, 6023 South Garfield Ave., Los Angeles 22, Cal., Raymond 3-6641. SOUTH CENTRAL: Minnesota Mining & Mfg. Co., 1221 Dragon St., Dallas 2, Texas. SOUTHEAST: James W. Crisp, Poinsette Apts., No. 2C, Greenville, S. C., 5-4172. ALL OTHER AREAS: J. B. Shacklett, American Lava Corp., Chattanooga 5, Tennessee, Amherst 5-3411. REPRESENTATIVES: CANADA: Ian M. Haldane & Co., P. O. Box 54, London, Ont. ALL OTHER COUNTRIES: Minnesota Mining & Mfg. Co., International Div., St. Paul 6, Minn.



Loom To Weave Narrow Fabric

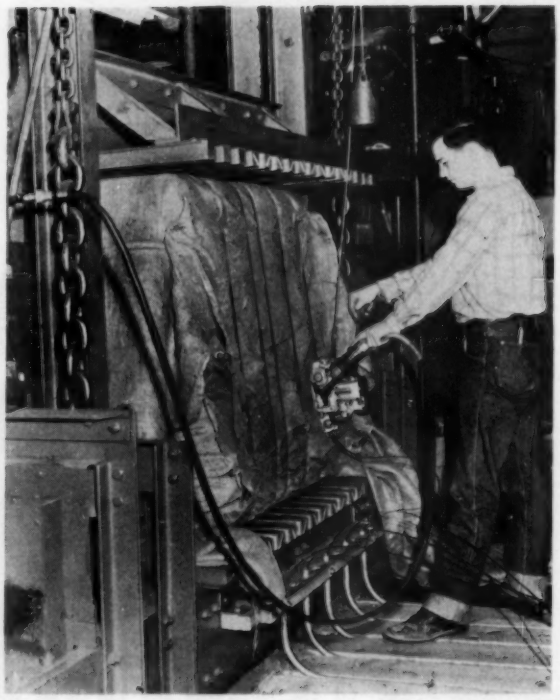
A narrow-fabric loom that weaves 1,000 ppm. is being manufactured by Bonas Brothers Ltd., Castle Gresley, Near Burton-on-Trent, England, and is being sold in the U. S. by Davis Silberman, Weavematic, Inc., Room 922, 40 Worth St., New York, N. Y.

Because two tapes are woven simultaneously from the same mechanism, each loom head inserts 2,000 (double) ppm.

The loom design is based on the Disco loom [TEXTILE WORLD, Jan., '53, p. 110]. Each loom is a self-contained unit, but looms are usually arranged in banks of 10. A weaver is expected to tend 30 to 40 units.

The loom is manufactured in two types: (1) a four-harness loom for zipper tapes and similar fabrics and (2) an eight-harness loom for more-complicated designs such as elastic webs. Fabrics from $\frac{5}{8}$ in. wide to $1\frac{1}{4}$ ins. can be woven.

Circle T-15 on Rader-Service Card



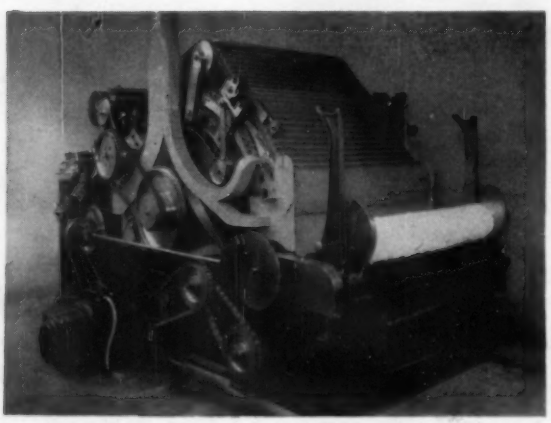
Bale-Strapping Tool

An air-operated strapping tool that tightens steel strapping to an even tension around bales or other packages has been marketed by Signode Steel Strapping Co., 2600 Western Ave., Chicago 47, Ill.

Strap is fed to the bale or other package through conduits placed at floor level, and the strapping tool is suspended within easy reach of the operator. When the strap has been tightened, the strapping tool seals the join and cuts off the strap.

There is no wasted overlap or underlap, and all the strap in the coil is used.

Circle T-16 on Reader-Service Card



Suction Cleaner for Cards

A suction-cleaning system for cards has been developed by Shirley Institute, Manchester, England.

Known as the Shirley pressure-point system, the attachment consists of a dust hood and ducts that fit portions of the card where air currents cause excessive dust and fly. These areas are (1) where the cylinder and doffer join, (2) above the lickerin, and (3) between the flats.

Manufacturing licenses are available through Shirley Developments Ltd., 40 King St. West, Manchester 3, England.

Circle T-17 on Reader-Service Card

ACETIC ACID · ACETIC ANHYDRIDE · FORMALDEHYDE · ACETALDEHYDE · METHANOL · VINYL ACETATE MONOMER · VINYL PROPIONATE MONOMER · ACETONE · PROPYLENE GLYCOL · NORMAL PROPYL ALCOHOL

Celanese

the logical source
for textile chemicals

ACETIC ACID

for example . . .

The ability to provide a steady supply . . . to provide dependable delivery . . . to offer on the spot technical service . . . these are just a few of the many good reasons why more and more textile manufacturers have come to rely on Celanese for their Acetic Acid supply . . . and for a growing list of basic textile chemicals produced by Celanese.

Through its expanded production facilities, its intensified research program, through its more stringent quality control techniques, Celanese is able to supply Acetic Acid of consistently higher quality, at stable cost, in larger volume than ever before. It is the *logical* source for textile chemicals. For further information, write: Celanese Corporation of America, Chemical Division, Dept. 571-K, 180 Madison Avenue, New York 16, N. Y. Celanese®

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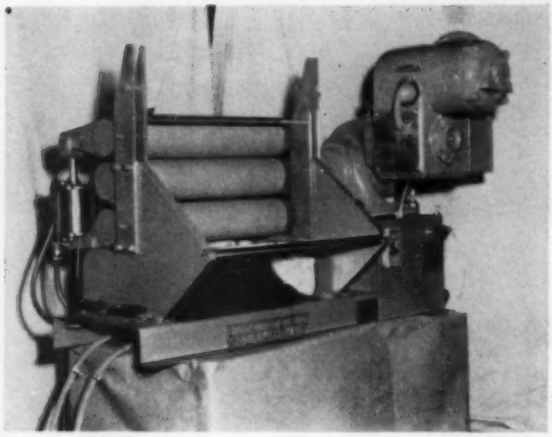
stocked in over 40 cities, Celanese Acetic Acid can be delivered on time anywhere in the U.S.A.

Export Sales: Amcel Co., Inc. and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16, N.Y.



Three-Roll Laboratory Pad

A three-roll pad for laboratory work has been marketed by Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

The machine is offered as a packaged unit, ready for use when plugged into a 115-v. 60-cycle line.

The rolls are 4x18 ins. and can be had in rubber, neoprene, Hycar, or stainless steel.

A two-compartment tank made of Type 304 stainless steel permits single or double immersion of fabric before each nip. A variable-speed drive is coupled directly to the center roll and provides speeds of from 2 to 20 yds. per min.

Pressure to the rolls is applied by air cylinders fed through an air filter and a pressure-regulating valve equipped with a pressure gauge. Air pressure to the pad is actuated by a push-button system and can be set to duplicate mill conditions. The lever-pivot pins are mounted in needle bearings. Stainless-steel let-off and batching rolls can be supplied if wanted.

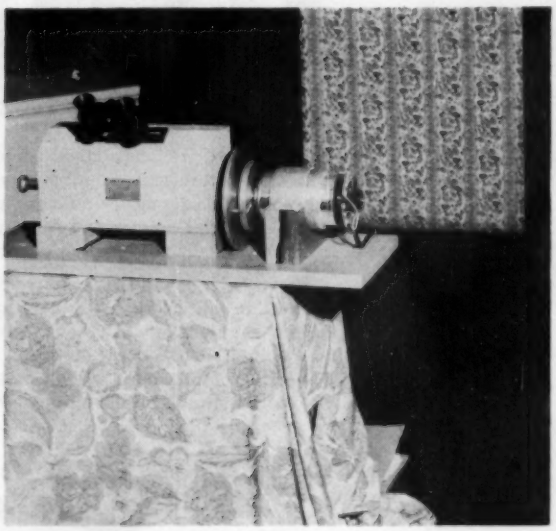
Circle T-18 on Reader-Service Card

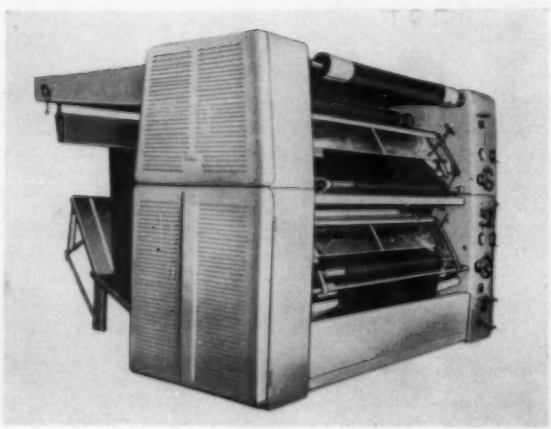
Pattern Viewer

A machine that provides a stationary view of a repetitive moving pattern has been developed by Barr & Stroud Ltd., Glasgow, Scotland.

Originally made for the paper industry, the unit is being adapted for use with textile printing machines to aid in determining pattern fit. British Rayon Research Association is responsible for adapting the machine to textile purposes.

Circle T-19 on Reader-Service Card





Double-Head Shear

A shear with two stationary cutting heads has been developed by Vollenweider Ltd., Switzerland, represented in the U.S. by Cosa Corp., 405 Lexington Ave., New York 17, N. Y.

In this machine, the shear cylinders remain stationary and adjustments for height of shearing and the passage of seams are made by raising or lowering the shearing beds.

The machine is slowed down automatically as seams approach the knives and returns to normal speed after the seam passes.

Circle T-20 on Reader-Service Card

EASY, FAST CURE FOR "COASTING" FRAMES!

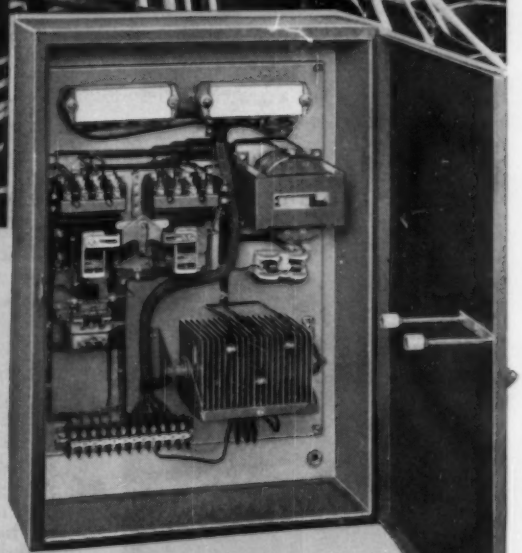
Your roving or spinning frame motor acts as its own brake when used with this

NEW Qwik-Stop CONTROL

"Coasting" frames waste time, material and money. But it's often difficult and expensive to add conventional brakes to existing frames.

This new **Qwik-Stop** electric braking control is the answer. It requires no frame modification. Simply replace your motor starter with this unit and *presto*—you have brakes. A wide variety of braking torque is available by a simple jumper reconnection. Dependable timing of braking cycle with easily adjusted pneumatic timer.

***Write** for Bulletin 8922 which gives the complete story. Address Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin.*



This **Qwik-Stop** unit provides complete control for starting, protecting and braking roving or spinning frames.

NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE!

SQUARE D COMPANY

Moisture Meter

A moisture meter that indicates the percentage of humidity in a wool or cotton sample has been announced by R. Acker, P. O. Box 124, Heidelberg, Germany.

The instrument is powered by three 1.5-v. batteries and weighs about 800 grams. The accuracy of measurement is ± 0.3%. The calibration can be checked at any time.

The needle electrodes, which are inserted in the yarn or fabric to be tested, are 45, 100, and 300 mm. long. There are contact rollers for surface and check tests.

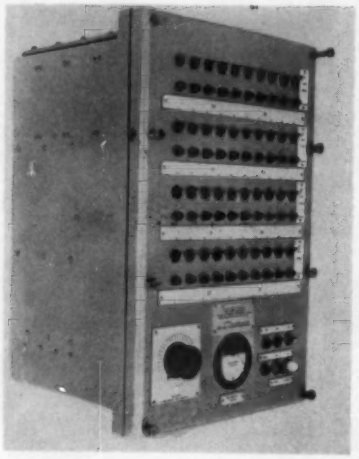
Circle T-21 on Reader-Service Card

Pressure-Sensitive Tape

A pressure sensitive tape designed especially for textile mills is being made by Minnesota Mining & Mfg. Co., 900 Bush St., St. Paul 6, Minn. Called "Scotch" textile tape No. 254, it has been designed to provide a long-aging adhesive that retains its holding power for extended periods under average mill conditions. The tape has improved resistance to adhesive transfer.

The tape has a tensile strength of 50 lbs. per in. of width and an adhesion of 55 oz. per in. of width. It is available in widths from ¼ in. up in 72-yd. lengths.

Circle T-22 on Reader-Service Card



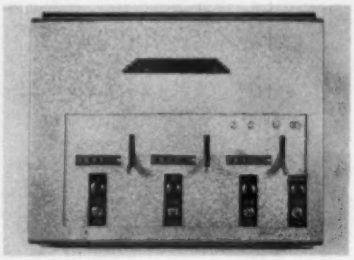
Temperature Monitor

A temperature monitor that can be used in textile mills, power plants, and other installations has been announced by Pickard & Burns, Inc., 240 Highland Ave., Needham Heights, Mass.

The monitor is a scanning and indicating device that automatically checks the temperatures of up to 40 thermocouples in the range of 100° F. to 400° F. every 10 secs.

The scanning circuit triggers an alarm system that indicates the locations of the thermocouples that have temperatures in excess of a preset value.

Circle T-23 on Reader-Service Card



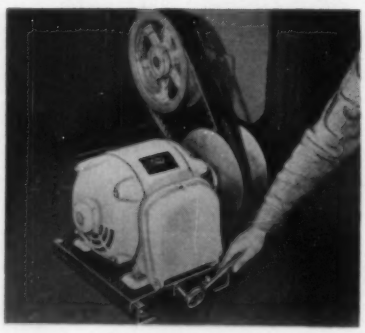
Calender Measuring Unit

A calender measuring unit announced by Trumeter Corp., 38 W. 32nd St., New York 1, N. Y., is supplied in two or more units, depending on the maximum number of pieces that can be passed, side by side, through the calender.

A series of movable contacts are placed over the top bowl of the calender. Each series controls a separate width of cloth. The top bowl, which serves as a measuring roll, is coupled to the unit. As the cloth passes over the bowl, each contact engages with its corresponding counter.

Immediately after the cloth leaves the top bowl, the counter stops automatically to give the correct length of each piece. A signal light indicates operating units. Various cloth widths of different lengths can therefore be measured simultaneously while passing through the calender.

Circle T-26 on Reader-Service Card



Adjustable Motor Base

A motor base has been designed by American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa., to eliminate stretched and sagging belts. The belt is adjusted with only one screw, and the adjustment is made while the motor is running.

Replacement of belts is just as easy. The adjusting screw is loosened and swung aside. Then the old belt is removed and the new one put on. The adjusting screw is replaced, and the motor is ready to run again.

The base can be mounted vertically, horizontally, or in an inclined position. The adjustment screw cannot rust or freeze.

Circle T-24 on Reader-Service Card

Spinning Ring

A spinning ring that increases traveler life, reduces ends down, and improves breaking-in schedules has been announced by Draper Corp., Hopedale, Mass. The new ring is sold under the tradename Mirror-Gold.

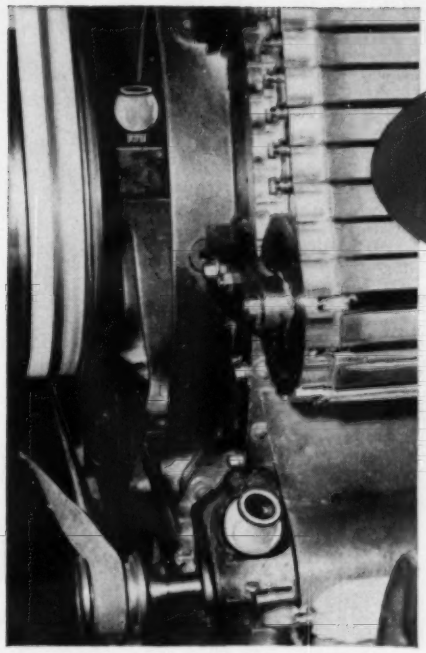
Circle T-27 on Reader-Service Card

Emulsified Wax

A carnauba-type wax that can be readily emulsified in hot water has been marketed by Concord Chemical Co., P. O. Box 800, Camden, N. J. The product is suggested for textile finishing and coating applications.

Circle T-25 on Reader-Service Card

CONTINUED ON PAGE 228



LUNKENHEIMER ENGINEERING DEVICES

First Line of Defense Against Profit-Killing Maintenance Costs

Lunkenheimer Engineering Devices pay for themselves many times over by preventing damage to expensive equipment. Lunkenheimer Oilers and Lubricators safeguard valuable machinery against friction damage. Lunkenheimer Pop Safety and Relief Valves keep destructive over-pressures under control. Lunkenheimer Air Devices cut expensive air losses. And *all* Lunkenheimer Engineering Devices do their job automatically...safeguard your equipment and provide economical operation year in and year out with a minimum of inspection and supervision.

When you specify Lunkenheimer, you get the benefit of the best *preventive* maintenance tools your money can buy. See the Lunkenheimer maintenance-reducing, service-minded Distributor in your area for literature and recommendations, or write The Lunkenheimer Company, Box 360, Cincinnati 14, Ohio.

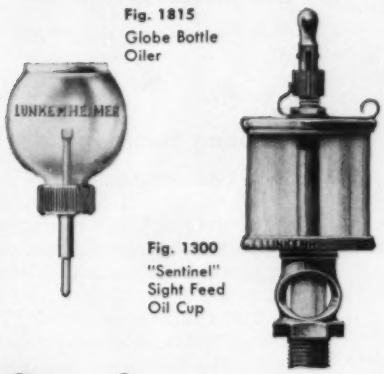


Fig. 1815
Globe Bottle Oiler

Fig. 1300
"Sentinel" Sight Feed Oil Cup

Fig. 1183
Automatic Liquid Gauge

Fig. 487
"Major" Drop Feed Lubricator

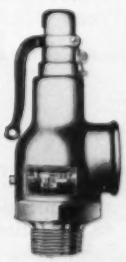


Fig. 1227
Pop Safety Valve for Air

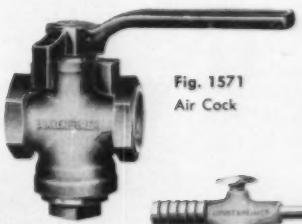


Fig. 1571
Air Cock

Fig. 96
Air Nozzle Push Button

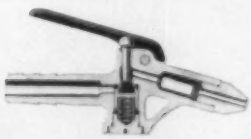


Fig. 1840
PT Air Nozzle Lever Handle

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L-957-10

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For more data, write this page number on Reader-Service card. →

NEW DYES AND CHEMICALS

Anionic Surfactant

Sul-Fon-Ate OE-300 . . . functions as a wetting and rewetting agent for compressive-shrinkage operations. It is particularly suggested as a toweling finish to give water absorbency. Tennessee Corp., 1330 W. Peachtree St., Atlanta 9, Ga.

Circle D-1 on Reader-Service Card

Reactive Dyes

Procion Brilliant Blue R . . . dyes cellulosic fibers bright reddish shades of blue that are fast to light and washing. The color has good solubility and produces even dyeings.

Procion Brilliant Red H3B . . . is a bright red that produces dyeings on cotton or rayon of goods washfastness and excellent lightfastness. The color is suitable for printing.

Procion Brilliant Red 5B . . . produces bluish-red shades on cellulosic fibers, silk, and nylon that have very good all-round fastness properties. The dye should not be printed alongside direct dyes that require copper aftertreatments or Soledon dyes developed with sodium nitrite.

Procion Brilliant Yellow 6G . . . dyes cellulosic fibers bright greenish-yellow shades that are fast to light and washing. The color does not accelerate tendering on exposure to light and is suitable for fabrics going into resin finishes. Arnold, Hoffman & Co., Inc., Providence, R. I.

Circle D-2 on Reader-Service Card

Softener

Sythravon SL . . . designed for softening cellulosic fabrics, provides a full, lofty hand and is easily handled in the mill. Heat resistance and storage stability are good. The product does not cause yellowing, and it will not retain chlorine. Arnold, Hoffman & Co., Inc., Providence, R. I.

Circle D-3 on Reader-Service Card

Premetallized Blacks

Irgalan Black RBL and **Irgalan Black GBI** . . . produce reddish and greenish blacks respectively. The RBL type goes considerably redder in artificial light. Recommended for raw stock, yarn, or piece goods of wool, nylon, or silk where maximum all-round fastness is required. Geigy Dyestuffs Div., Geigy Chemical Corp., Ardsley, N. Y.

Circle D-4 on Reader-Service Card

Basic Dye

Maxilon Blue GLA . . . designed particularly for dyeing acrylic fibers, produces pure blue shades of excellent lightfastness, as well as very good fastness to washing, perspiration, fulling, sea water, bleaching, carbonizing, and dry cleaning. Geigy Dyestuffs Div., Geigy Chemical Corp., Ardsley, N. Y.

Circle D-5 on Reader-Service Card

Aftertreated Direct Dye

Lumicrease/Cuprofix Grey 3LBN . . . produces bluish-gray shades of maximum fastness such as required for automotive and decorator fabrics. The color is level dyeing; and wetfastness can be improved by aftertreating with Cuprofix, Sandofix, or urea-formaldehyde resins. Nylon and acetate fibers are well reserved. Sandoz, Inc., 61 Van Dam St., New York 13, N. Y.

Circle D-6 on Reader-Service Card

Polyethylene Textile Softener

Synthravon P . . . a nonsubstantive softener developed for addition to thermosetting-resin finishes or as a pure finish by itself, improves tensile strength, sewability, and crease resistance. The product does not increase chlorine retention of resin finishes and has good resistance to dry cleaning, laundering, yellowing, and scorching. Arnold, Hoffman & Co., Inc., Providence, R. I.

Circle D-7 on Reader-Service Card

Nonionic Detergents

Syntergent 35-T . . . is specifically suggested for scouring carpet wools in neutral liquors at low temperatures. Advantages claimed for scouring without added alkalis include better color, a softer, loftier hand, and easier carding and spinning.

Circle D-8 on Reader-Service Card

Syntergent K . . . recommended for scouring all types of wool at 120 to 130° F.

Both products produce recovered wool grease of improved color. Nopco Chemical Co., Harrison, N. J.

Circle D-9 on Reader-Service Card

Vat-Printing Emulsion

Vatclear Concentrate . . . may be used to replace starch pastes in preparing printing vehicles for fabrics. The product is water-soluble, does not require cooking, and maintains a uniform viscosity at any printing speed. Because it contains no solids, the product will not build up under doctor blades to give facing and is claimed to produce sharp patterns with absence of flushing.

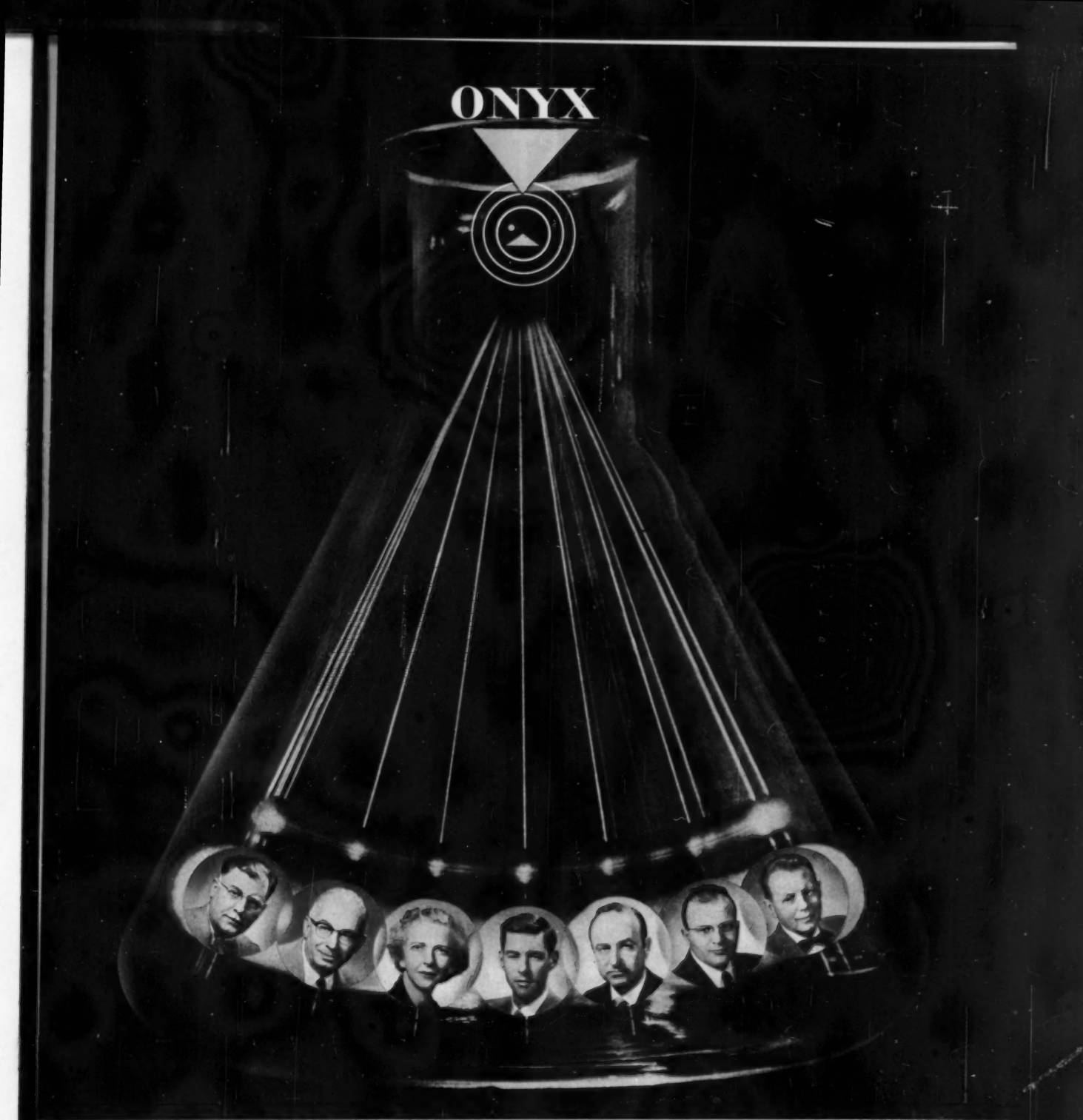
Fabric printed with the aid of this emulsion need not be aged immediately because the paste is very stable. Prints are said to age more easily and be soaped out to a soft hand without difficulty when the emulsion is used in printing formulas. Metro-Atlantic, Inc., Centredale, R. I.

Circle D-10 on Reader-Service Card

Optical Whitener

Uvitex ER Conc. . . . whitens polyester fibers by exhaustion or padding methods of application. The product has good fastness to light and washing and works well on acetate, Arnel, cotton, nylon, and rayon. Ciba Co., Inc., Box 25, Village Station, New York 14, N. Y.

Circle D-11 on Reader-Service Card



A matter of time-tested Principals...

Important in the formulation that spells "total customer service" are time-tested *principals*. Every member of Onyx's team is well grounded, with years of experience in solving the particular problems of textile chemistry. More, they are tested *as a team* to offer you, 1) All the services of the entire Onyx organization, 2) The most advanced chemicals and finishes, such as Aston®, Mollisan, Repelosan, Repel-O-Tex, and many others, 3) Pioneering research aimed at tomorrow's needs *today*, 4) Cooperative application engineering service, 5) Production of quality chemicals – up-to-formula and delivered on time, and 6) Field service you can rely on. Ask the Man from Onyx and *see*. ONYX OIL AND CHEMICAL COMPANY, Textile Division, 190 Warren Street, Jersey City 2, N. J.

LEFT TO RIGHT: F. O. ROBITSCHEK, *President;* DR. E. I. VALKO, *Director of Research;* DR. GUILIANA TESORO, *Assistant Director of Research;* PHILIP MACLEAN, *Sales Manager, Textile Division;* PAUL JACOBS, *Assistant Sales Manager, Textile Division;* MORT SCHLESINGER, *Manager, Customer Service;* H. A. MOLTENI, *Production Manager*

THIS IS NO. 125 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

HOW TO ADJUST TRAVERSE FRAME STOP ON NO. 50 WINDER

The upper traverse frame stop on the Leesona No. 50 Precision Winder can have a very definite effect on the quality and appearance of the packages produced on this winder. If it isn't set correctly, it can cause unsatisfactory packages to be wound.

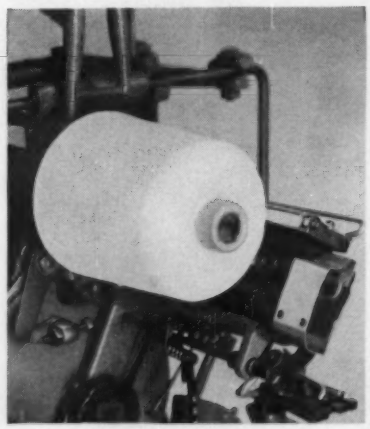


Fig. 1

On a winder equipped for pineapple coning, if the stop (see Fig. 1) is set so that the pressure roll presses too firmly against the empty cone at the start of winding, the first few layers of yarn will be scrambled and will slough off in a subsequent operation. On the other hand, if the stop is set so that the pressure roll is positioned too far away from the empty cone, the first few layers of yarn will not be under pressure and will result in what is commonly known as soft centers. This soft mass of yarn will bulge out at the ends, as it is compressed by succeeding layers of yarn. Setting the traverse frame stop incorrectly could also result in damage to the pressure roll bearings.

The large diameter pressure rolls that are now supplied turn on grease packed ball bearings that do not have to be relubricated. They're designed to give long trouble-free life, low maintenance and easy replacement as shown in Fig. 2. But bearings such as those used in the pressure roll cannot withstand usage that is too severe. One type of usage that can damage them results from the upper traverse frame stop being set so that the pressure roll can contact the empty cone too firmly. With the stop set in this fashion the roll can be slammed against the empty cone, for the operator usually starts the spindle with a very swift motion. The force of the pressure roll striking the empty cone may be sufficient to injure the bearing particularly if heavy pressure is being used.

For pineapple coning, the stop should be adjusted so that the pressure roll will just barely touch the *high point* on the empty cone. The seam along the cone taper is usually slightly higher than the rest of the surface. Having the roll barely touch at this point gives a satisfactory adjustment for fine denier yarn. For heavier deniers it may be necessary to set the roll with the thickness of a piece of paper between it and the cone. Of course, the roll must be aligned properly with the cone taper before this adjustment can be made. If the stop is adjusted correctly it will allow the first layers of yarn to be wound satisfactorily and will also keep the roll from striking forcibly against the empty cone.

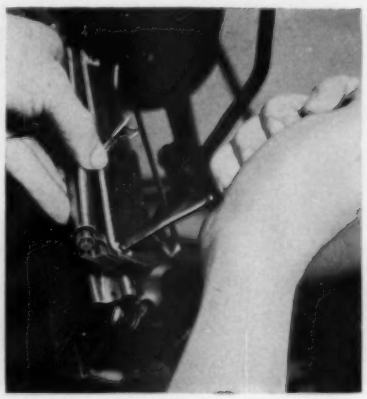


Fig. 2

November 1957 — 23.7.9

Winding and Twisting Machinery for Natural and Synthetic Yarns

UNIVERSAL WINDING COMPANY

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Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Slashers Are Stopped To Take Leases

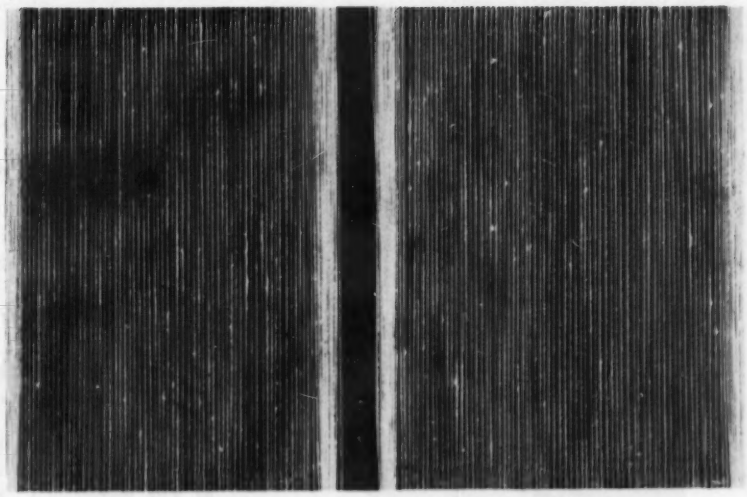
Technical Editor:

After reading the article about new slashers [TEXTILE WORLD, July, '57, p. 72], we wonder if leases can be taken without stopping the slasher. Can the operator use the creep gears without stopping the machine so that warps don't get overheated while they are in contact with the stationary cans? (1332)

The slashers mentioned in the story have a very slow and uniform creep speed. Leasing can be done so quickly and easily that the yarn does not become scorched on the cans.

We have not heard of warps being leased without stopping the slasher, but we understand that one mill has done a lot of research trying to develop a method of leasing without stopping the slasher.

More on Combing Flat Strips



COTTON YARN on the left is from regular cards with 3% flat strips taken out. Yarn on the right has all flat strips fed back into the lap at the feed roll.

Technical Editor:

Looking back through our past issues of TEXTILE WORLD, we came across a procedure for combing flat strips at the back of the card [Feb., '54, p. 154]. We'd like to see a picture of the results, and any additional information you have. (1333)

A good card grinder with the instructions given in the above-mentioned issue of TEXTILE WORLD could easily set up a card for a trial. Don't forget that the trickiest part is the correct adjustment of the flat comb so it will comb on the upstroke. A few trial runs will indicate the correct position and setting.

Both yarns shown in the picture can be classed as B or B–. One yarn is regular with 3% flat strips taken out. The other yarn has all flat strips fed back into the lap at the feed roll.

Clean Knitting Machines With Air Two Ways

Technical Editor:

We are thinking of applying an air-cleaning system to our Tompkins spring-needle knitting machines. What are the prevalent practices? (1324)

There are two common methods of cleaning knitting machines in the U. S. One method uses a traveling cleaner, which cleans up to 30 machines. The second method uses compressed air with a blowing unit attached to each head of every machine.

The traveling cleaner usually rotates on a track hung from the ceiling. The track winds around the knitting room and is located so that it blows off each machine at intervals of 2 to 4 mins.

The air blast is created by a fan driven from an electric motor on the cleaner. The fan may rotate or it may have an air duct pointed at the ceiling to keep beams, girders, ceilings, and walls clean.

Individual cleaning systems require a compressor and lines to feed each machine. A 100-psi.-ga. compressor to deliver 55 to 60 cu. ft. of air per minute would be ample for 50 machines. Some mills prefer two smaller compressors for emergency sake, and some mills operate a timing device to blow the machines off at regular intervals and conserve air pressure.

Compressed air enters a rotating valve on the top bracket of each head and is carried through a copper pipe down the take-up bracket arm. Small holes near the end of the pipe direct air to the needles and burrs. Machine builders are now fitting this device to new machines.

Attempts have been made to clean machines by attaching a blade to the take-up bracket, but these experiments have not been successful to date.

Use This Formula To Test Blends

Technical Editor:

We started to blend nylon with our worsted yarns recently and found the average linear variation does not approach our present all-wool standards. However, the yarn appears to be the same on a seriplane test. What is the reason? (1314)

If the unevenness of the blend was measured on a capacitance-type tester, you should make a correction because the dielectric constants of the two fibers are not the same. The high frequency of the measuring circuit is affected by variations in the blend and variations in the yarn mass.

Use this formula to find the coefficient of variation:

$$CV_1 = \sqrt{CV_R^2 + \left(\frac{C_1 - C_2}{C_1 + C_2}\, CV_B\right)^2}$$

Where: CV_R = true coefficient of variation per cent of the mass per unit length

CV_B = coefficient of variation per cent of the irregularity in blending

CV_1 = coefficient of variation per cent registered by the tester.

C_1 and C_2 = reading constants according to the table below:

Material	Constant (C)
Wool	1
Cotton	0.91
Viscose	0.89
Nylon	0.90

Consider a 50-50 wool-nylon blend. Assume that the blending of the wool and nylon varies along the length of the yarn and $CV_B = 50\%$ and $CV_R = 20\%$.

$$CV_1 = \sqrt{20^2 + \left(\frac{1 - 0.9}{1 + 0.9}\, 0.5\right)^2}$$

$$= \sqrt{400 + 6.75}$$

$$= 20.3\%$$

Humanics — A TW Brief

How To Finish Cooking A Half-Baked Idea

Every level of management faces the problem of what to do about the half-baked ideas presented by subordinates. To brush them aside or ignore them is to discourage receipt of all ideas.

So the best thing to do is to salvage anything possible from the idea and, above all, protect the dignity and goodwill of the donor. Remember that many times a worker has what looks to him like a valuable idea. But with your more extensive knowledge of the subject and broader viewpoint, you can see a number of flaws in it.

Nothing will be gained by dismissing the idea as worthless. Diplomatic handling of the matter and accepting the idea for future consideration will retain the good will of the worker. Then, too, you'll be surprised how many times a seemingly wild idea has merit and can be adapted to use after some thought and experimentation.

So don't dry up the source of ideas. If a suggestion is wholly impractical, explain the reasons why it won't work and then encourage the donor by suggesting another problem that he can tackle.

When you receive a half-baked or incomplete idea that has some merit, give it the benefit of your thinking and pass it on up the line. Perhaps the combined thinking at all levels will build something valuable from it. GEORGE M. DODSON

How To Clean Looms

Technical Editor:

What are the latest methods of cleaning looms? (1335)

One of the latest methods of cleaning looms is the spray-gun method. Here's how one mill uses this method:

The job is done on looms when the warp runs out. All warps are cut out or the patterns are lifted out when they are run out. Drawn warps are tied back in the loom.

A trigger-controlled spray gun is used to spray the looms with a cleaning solution. The spray gun is screwed into a fitting on the end of a rubber hose connected to the compressed-air supply line.

The solution is sprayed on the loom from the arch to the floor. The spray gun is then removed from the air hose, and the loom is blown off from the top down with compressed air.

Rags and brushes are not used, and no manual scrubbing is done. The blown-off lint is removed from the floor, and the job is finished.

This method results in a good cleaning job. There's no caked lint and oil left. A man who does this job is employed on each of the three shifts.

Put Drag on Sliver When You Run Two Slivers

Technical Editor:

We read the article on direct spinning [TEXTILE WORLD, July, '57, p. 66], and we were interested in the statement that "sliver is bicoiled in many of the cans." We have tried for some time to put two slivers in one can for this purpose. We have, however, been unable to run two slivers so that one sliver will not gain over the other. Loops ultimately occur that either jam in the trumpet or pass through the drafting zone to form slubs. What do you suggest? (1331)

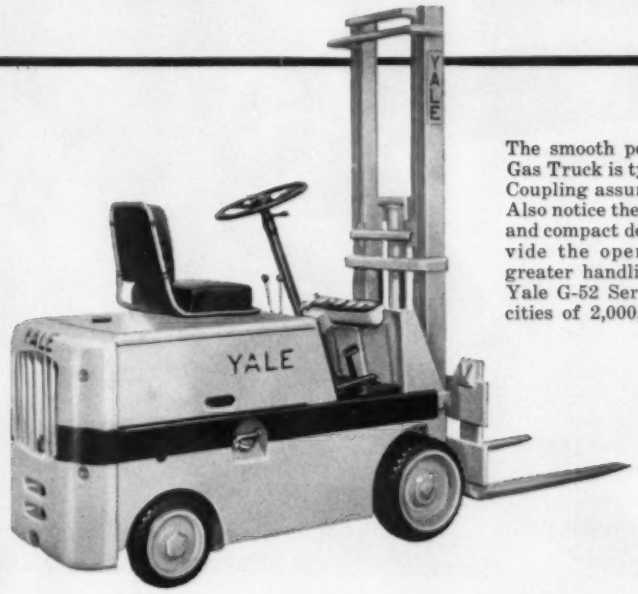
Because of the differences in the thickness of slivers and possible slippage under the back roll, one sliver will sometimes gain on the other and the objectionable loops result.

We don't know what frames you operate but suggest that somehow or other you place a slight drag on the sliver to keep it under slight tension as it feeds into the trumpets. If the sliver is passed over a lifting roll, the speed of the lifting roll usually can be adjusted to accomplish this drag.

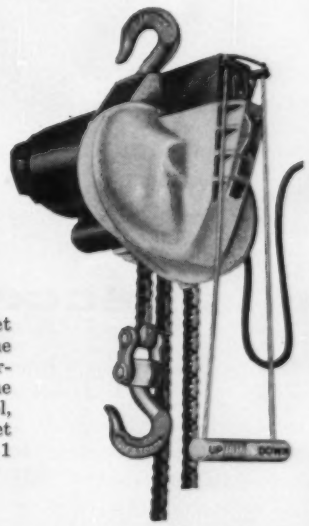
An extra roving rod intercepting the path of the sliver will provide enough drag on the sliver to maintain a uniform feed.

Yale G-52 Gas Truck and Midget King Electric Hoist...

...an efficient handling team for the textile industry



The smooth performance of this Yale G-52 Gas Truck is typical of all Yale trucks. Fluid Coupling assures shockfree starts and stops. Also notice the low cowl, grouping of controls and compact design—these Yale features provide the operator with extra visibility, greater handling ease and maneuverability. Yale G-52 Series Gas Trucks come in capacities of 2,000, 3,000 and 4,000 lbs.



Among the many Yale hoists, the Yale Midget King Electric Hoist is especially popular in the textile industry. That's because this hoist is powerful, portable and economical. What's more, the one-hand bar control gives perfect load control, leaves one hand free to guide the load. Yale Midget Kings are available in capacities of ⅛, ¼, ½, 1 and 2 tons.

Find out how Yale G-52 Gas Trucks can speed your floor level handling operations in production, shipping and storage areas... how Yale Midget King Electric Hoists boost efficiency when it comes to overhead handling. For full facts and expert advice on equipment selection, contact your Yale representative or send coupon below.

To meet the need of expanding industries for better materials handling methods, look to Yale for advances in research, engineering, manufacturing, sales, service—as

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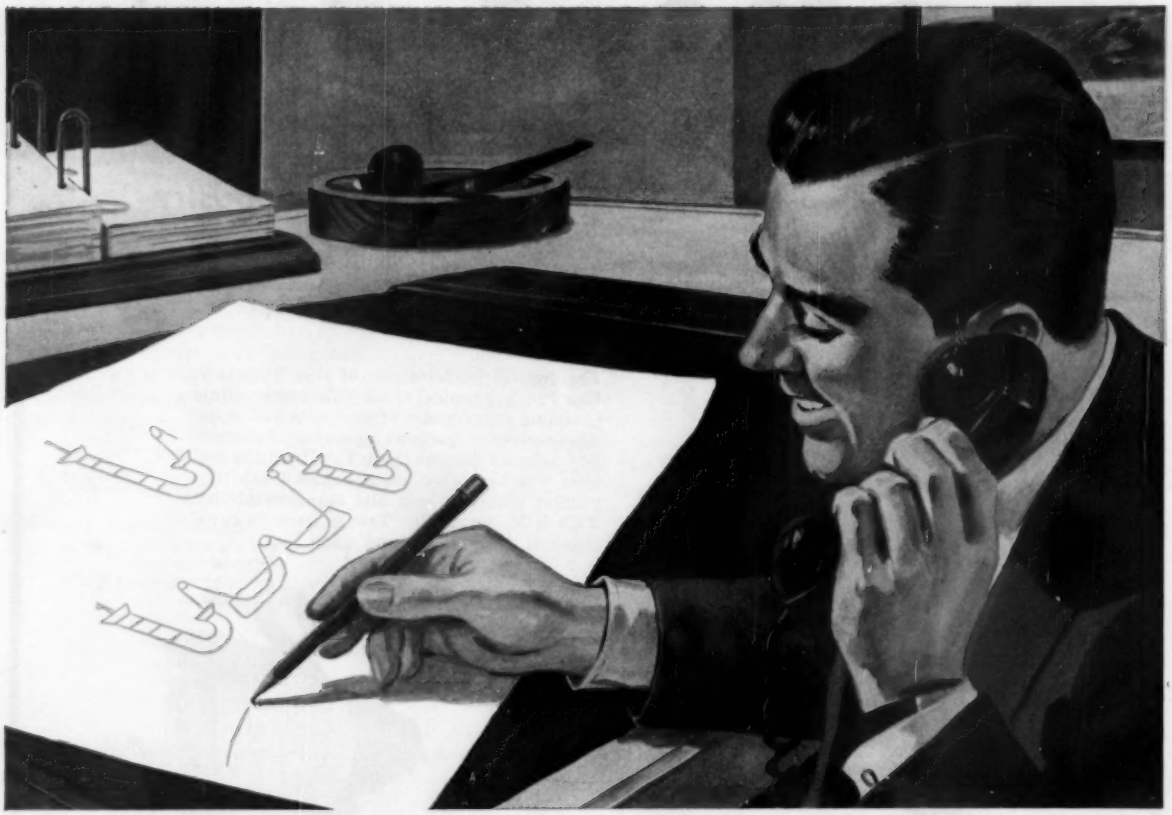

What is Becco Continuous Bleaching?

Becco Continuous Bleaching is a process principle, on which various bleaching processes are based.

The process designed by Becco to meet your particular requirements may be *single-stage*, or it may be *multi-stage* – in any case it will be designed around a Becco-type J-Box, dry or wet system, which has proved itself in more installations than any other type.

It is the J-Box in which "*Nothing moves but the cloth.*" Time-proved features not available with other equipment include:

Easily accessible piling mechanism;
All moving parts in full view;
Uniform, thorough steaming.

Or – Becco Continuous Bleaching might also refer to the recently developed "short-time" open width process, for which equipment is now available.

Becco field engineers are trained specialists who can advise you which system to choose for your particular needs, discuss the relative merits of each, and what they will mean to you in terms of consistently high-quality work at the lowest production cost.

This is just one of many Becco services available to you – at no cost, no obligation.

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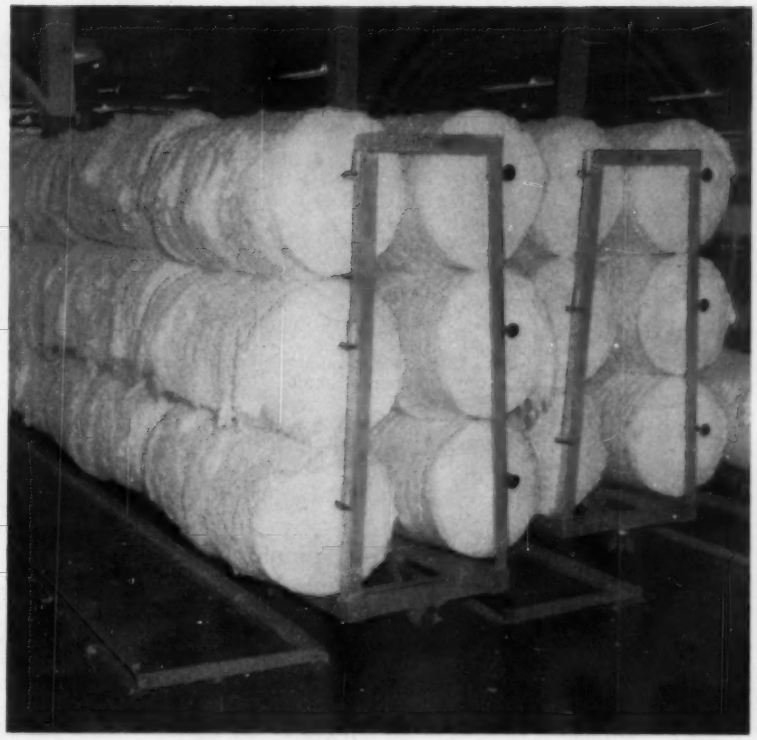
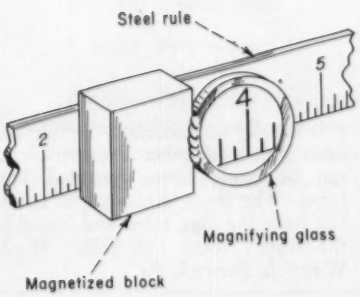


Rails on Floor Keep Lap Trucks Orderly

Large picker laps are hauled into our card room on special trucks that are stored on the spare floor. The trucks used to be shoved in the area at all angles, and much floor space was wasted.

Frequently the trucks would be jammed together, and the laps would be damaged or different blends would run off on each other.

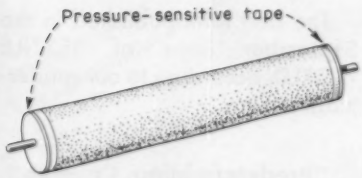
We solved the problem by laying some rails on the floor with the space between them just wide enough to accommodate one full truck. Trucks are now stored systematically, and the laps reach the cards without damage. The system also saves much floor space and gives the room a neater appearance (K-3647). *Carolina Mills, Inc., Newton, N. C.*



Magnetized Block Holds Magnifying Glass

Here's how to make a useful magnifier for reading the lines and numbers on steel rules, gauges, and calipers:

Weld a small magnifying glass to a steel block, and magnetize the block. The block will stick to any steel surface and leave your hands free for other uses. (K-3472)



Tape Holds Fillet On Take-Up Roll

We had a lot of trouble caused by our take-up-roll covering pulling loose at each end of the roll. The fillet would break and the entire roll would have to be recovered.

The problem was solved by wrapping pressure-sensitive tape around the end of the rolls after they are covered. The tape is only ¾ in. wide and does not extend to the cloth selvages. We have had very few take-up rolls with loose fillet since we began taping them. (K-3458)

Try a Looper's Light Under the Dial

A light underneath the dial will often help in looping fine-gauge work if the light is not too strong to fatigue the operator's eyes.

A very small light can be made that can be operated by a foot pedal to shine directly on the work at all times. Cut a piece of ¾-in.-dia. tube 26½ ins. long, and cut a slot down the center of the tube.

Install a small pulley at one end of the tube, and weld this end to the upper part of a looper foot-control rod cut to a height of 30 ins. Slide a lamp socket in the tube so that a light bulb can project from the slot.

Tie a spring to one side of the socket and a strong cord to the other side of the socket. Run the cord over the pulley and tie it to the movable foot-control rod.

Attach the spring to the tube end with a pin, but leave a space for the cord to slide through. Thread the light cable to the socket through the spring in the tube. (K-3302) *H. J. Haas, Martinsburg, W. Va.*

September Prize-Winning Kink

The best Kink published in the September issue of TEXTILE WORLD, according to our reader-judges, was:

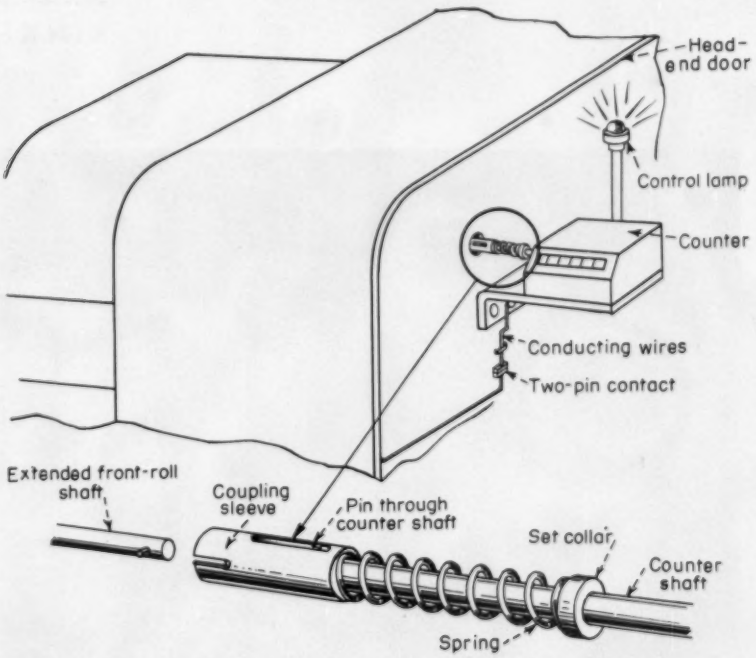
"Predetermining Counter Improves Spinning Efficiency"

The winner is being sent a check for $25 with the compliments of TEXTILE WORLD.

The prize-winning Kink is reprinted at the right.

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.



Predetermining Counter Improves Spinning Efficiency

Our mill spins 13,000 yds. of 40s yarn on 11-in. tubes. We had trouble in putting the correct yardage on the tubes when the frame was out of adjustment or the roving was off weight.

We solved the problem by attaching a predetermining counter to the frame. A lamp lights up when we have the exact yardage on the tube. Here's how we rigged the counter on the frame:

A piece of angle iron was used to fasten the counter to the head end of the frame so that the shaft of the counter is in line with the front rolls. A 1-in. hole was bored through the door for the connection.

The angle iron was then bored, and a piece of conduit was fastened on with two nuts to hold the lamp. The front-roll shaft was lengthened with a piece of round stock that almost reaches the head-end door.

Next, a $\frac{1}{4}$-in. pin was put through the roll-shaft extension to give a positive connection with a coupling sleeve. The sleeve has two slots that are engaged by the roll-shaft pin; a pair of oblong holes in the other end of the coupling engage the pins on the counter shaft. This coupling is necessary to permit the opening of the head-end door.

There are other ways to attach a counter to a spinning frame, depending on the kind of frame used, but I have found this system to be very satisfactory. The arrangement gives us the correct amount of yarn on the tube, fewer doffer stops, and improved yarn quality. Also, it is easier to spot mechanical defects. **(K-3372)**

Make Short Knock-off Tubes From Damaged Long Tubes

On many of the MP looms, S5, S6, etc., the brake and knock-off motion has a knock-off tube in two sections. Because of faulty setting, the knock-off tube is sometimes worn through by the knock-off dagger hitting it.

Usually, the most wear takes place on the long knock-off tube at the right-hand side of the loom. When this long section is replaced, the damaged section can often be cut to make two short sections for the left-hand side of the loom.

So when replacements are ordered, it is usually not necessary to buy any short knock-off tubes because plenty can be made from discarded long tubes. The short tubes can be cut to size from the long tubes and issued by the supply room. (K-3229) *H. E. Wenrich, Berwick, Pa.*

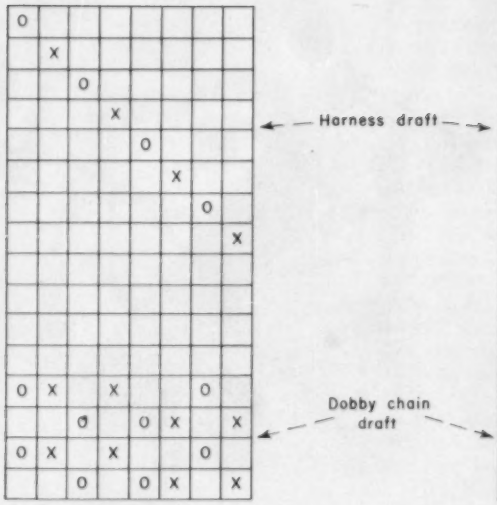


Fig. 1

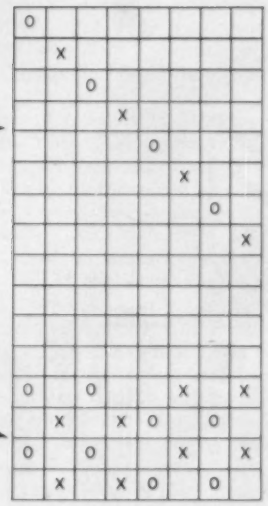


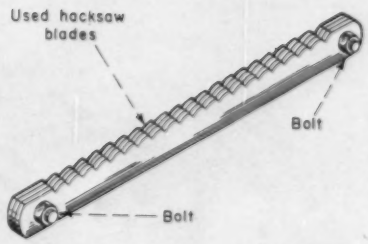
Fig. 2

Change the Dobby Pegs To Eliminate Warp Streaks

We were getting bad warp streaks in a fabric composed of alternate ends of black viscose and white acetate. The pattern is shown in Fig. 1.

By changing the dobby pegs as shown in Fig. 2, we eliminated the warp streaks without changing the face of the cloth.

The warp is drawn in eight harnesses with four ends per dent in the reed. In the pattern draft, viscose is shown as O and acetate as X. (K-3550) *Hokao Fukaya, Fukui-ken, Japan*



Cut Slots in Wood With a Homemade Rasp

When you need to cut a slot or groove in a piece of wood in the machine shop or mill carpenter shop and don't want to set up a machine for only one cut, you can cut the slot with a wood rasp made from old hacksaw blades.

Put the blades side by side and bolt them together with a bolt in each hole of the blade. Use as many blades as you need to make any width of slot.

For wide slots, use machine hacksaw blades; for narrow slots, use hand blades. Reverse the direction of the cut of every other blade if you wish, and you can cut in both directions. Blades assembled in several widths will save setting-up time. (K-3579)

$500 for Best Kink in 1957 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1957.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

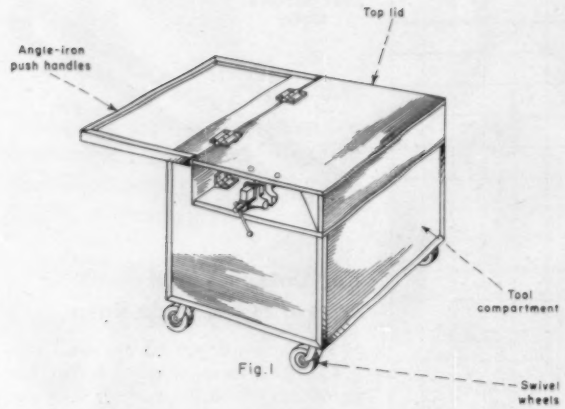


Fig. 1

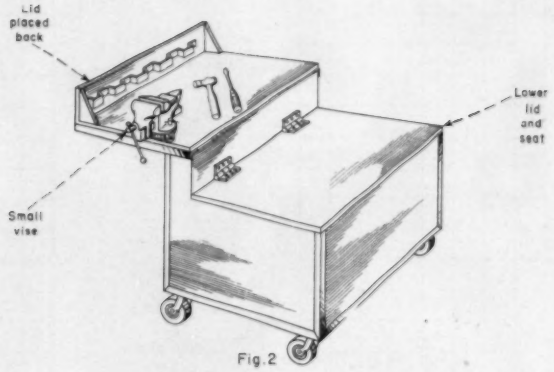


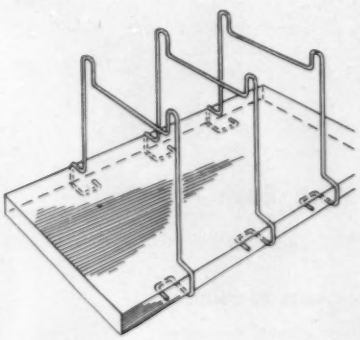
Fig. 2

Box-Workbench for Small Tools Is Rolled to Working Areas

A portable combination tool box-workbench for mill section men or knitting fixers can be used right at the machine being fixed. The workbench section has a vise and space for tools for lightweight work.

When the workbench section is closed, the box is small and compact and can be rolled down any alley in the mill. Its over-all dimensions depend on the width of machine alleys.

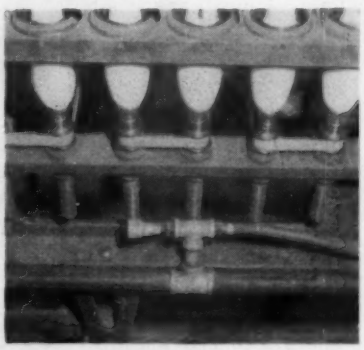
The workbench is shown closed in Fig. 1 and open for work in Fig. 2. When closed, it can be stored in a small space. (K-3562)



Portable Drying Racks Are Made From Steel Wire

Portable drying racks for hanks of yarn, dyed swatches, or towels can be made from lengths of steel wire as shown in the sketch.

The racks are self-supporting on any table or bench with enough overhang on two sides. When they are not needed, the racks can be removed easily and stored for future use. (K-3619)



Remove Yarn Clamps To Increase Spooler Efficiency

The yarn-clamp assembly behind the detectors on spoolers are designed to catch short pieces of yarn that come out from the knotter after the ends are tied up.

Operators should remove these ends, but very often the short ends jump up into the cheeses before the operators discover this defect.

The cheese with two ends goes to the warper and causes trouble. If the warper operator spots the trouble, he sends the defective cheese back to the spooler operator and more time is lost.

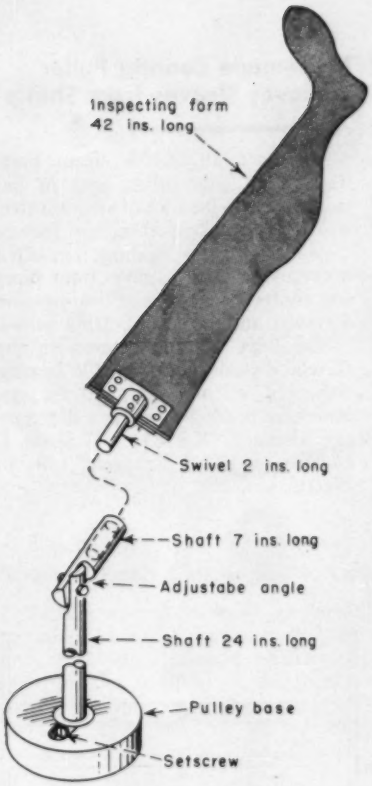
If the double end goes through the warper undetected, it may get caught in the comb; and if the end doesn't break, the defect may cause a deep groove in the beam and more trouble at the slasher.

We stopped all this trouble by simply removing the yarn-clamp assembly behind the detectors. Our efficiency immediately increased, and waste was reduced. (K-3576)

Air Connection on Frame Reduces Spinners' Work

Our roll pickers and spinners used to complain of the long lengths of air hose they had to drag with them and the distance they walked to connect the hose to the pressure system.

We improved working conditions in our spinning room by running the air pipe along the bottom rail of each frame and installing a hose connection in the middle of the frame. Our operators now use a short length of air hose and have to walk only a few feet to make an air connection. (K-3651) *Carolina Mills, Inc., Newton, N. C.*



Hosiery Inspecting Form Is Easily Changed

We required an inspecting form for our nylon stockings for checking against machine-inspection methods. We developed a unit that was so successful that we placed a number throughout the mill. Here's how it is made:

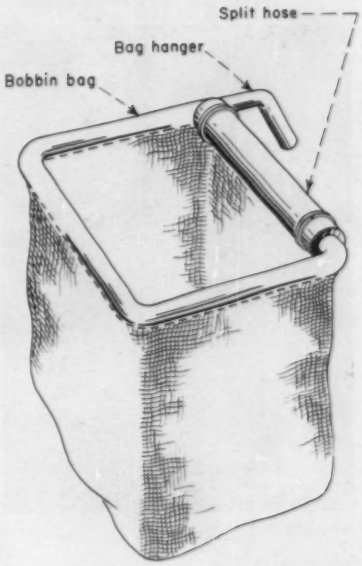
Use a 12-in.-dia. pulley 3½ ins. wide for the base. Push a 24-in. length of 1¼-in. shafting in the pulley bore. To make the height of the stand adjustable, screw a setscrew in the axle. Fill the pulley with concrete but leave a space for the adjusting screw.

Cut the top of the shaft away to form a flat surface and drill the flat surface to receive a bolt. Cut away the end of a 7-in. length of 1⅜-in. shafting to take the same bolt used in the 1¼-in. shafting. Drill a ½-in. hole in the other end of the 1⅜-in. shafting to take the swivel pin of the inspecting form.

The inspecting form is cut from $\frac{5}{32}$-in. black plastic board and is rounded and polished. Screw a 6½x3x¼-in. steel plate on both sides of the form. Recess a 2-in. length of 1⅜-in. shafting to take the inspecting form.

Tap a short length of $\frac{7}{16}$-in. steel rod in the base of the form, and allow it to protrude 2 ins. This pin connects the form to the stand and the swivel. The shafts are bolted together, and the unit base can be painted to match the mill's color scheme.

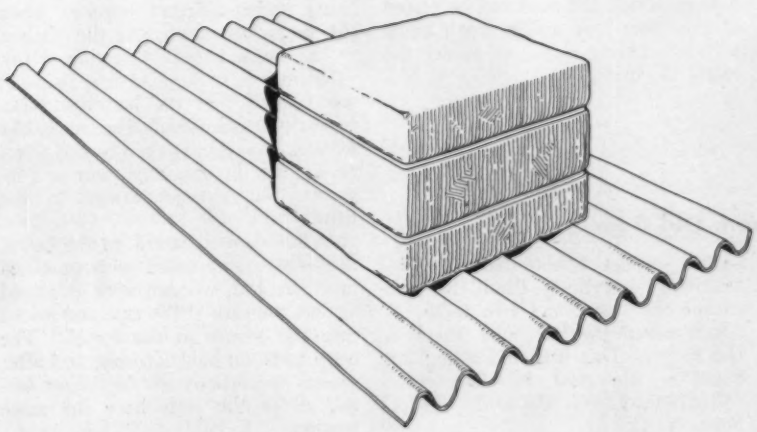
We've found that the height and angle of the form are correct for each inspector. The form can be changed in a few seconds and the unit is easy to store and cheap to make. (K-3601) *H. J. Hall, Hinkley, England*



Old Rubber Air Hose Protects Loom Bobbin Bags

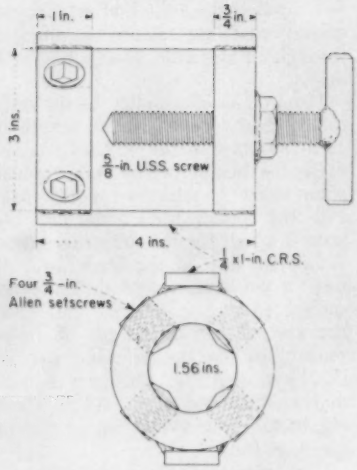
Our bobbin bags were wearing on the left-hand side where the bobbins hit as they are ejected from the shuttle. We took worn-out rubber air hose and made bumpers for the bags.

A section of hose the same length as the side of the bag is cut. The hose is split lengthwise down one side, placed over the rim of the bag, and fastened at each end with a wrap of light wire. (K-3546) *Gerard Maillou, Magog, Que.*



Corrugated-Roofing Pallet Protects Bales and Boxes

There is always a danger of water, rot, and mildew damaging bales and boxes stacked on the floor for long periods of time. The danger can be lessened by stacking the material on sheets of corrugated-metal roofing. The corrugations help insulate the material from the floor and permit air to circulate and combat dampness. (K-3495) *H. J. Haas, Martinsburg, W. Va.*



Homemade Bearing Puller Removes Sleeves from Shafts

We weld all of the steam lines, water lines, and other lines in our mill. We also do a lot of stainless-steel welding on tanks, kettles, and linings.

Along with this welding, it is often necessary to pull bearings from pipes and shafts. To pull the bearings, we designed and made a bearing puller.

The bearing puller, shown in the sketch, is made for a size 206 bearing only, but it could be used for any other size bearing by using a different-size sleeve. (K-3584) *William J. Delaney, in The Stabilizer, Lincoln Electric Co.*

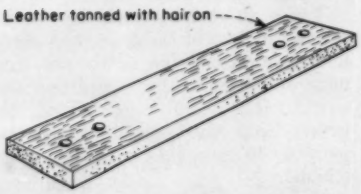
Raised Office and Sample Cart Save Overseer's Time

Here are two Kinks shown in one picture that might be helpful to any mill that cards and spins.

The "raised office" in the corner of the spinning room permits the overseer to attend to his paper work and look over the room from the same position. He can see over the tops of the frames by standing up on the platform.

The yarn-sizing cart in the foreground, designed by Werner Textile Consultants and built by the mill, permits the tester to select samples directly from certain frames and take several of them to the laboratory at one time, instead of taking them singly as is usually done.

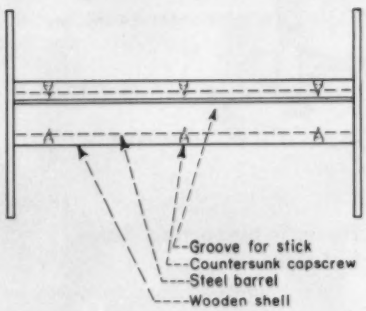
There is a drawer in the cart for roving samples, which the tester also picks up while he is in the manufacturing rooms. Altogether, this cart saves the operator who picks up samples about 2 hrs. per round. (K-3374) *Buck Creek Cotton Mills, Siluria, Ala.*



Use Scrap Leather To Make Jack-Motion Straps

Our looms are equipped with heavy jack motions, and the short straps used are too light for some fabrics. Discarded checkstraps can be used to make jack straps that are better than the original straps and at no cost.

In making the straps, it is advisable to punch two holes in each end. If a hole pulls out, the hook can be placed in the other hole and a repair made without coming out from under the loom. (K-3055)



Bigger Beam Barrel Reduces Yarn Waste

We had about 25 yds. of waste at the run-out of each jute beam. The waste was caused by the warp ends being under different tensions when the beam was started at the slasher.

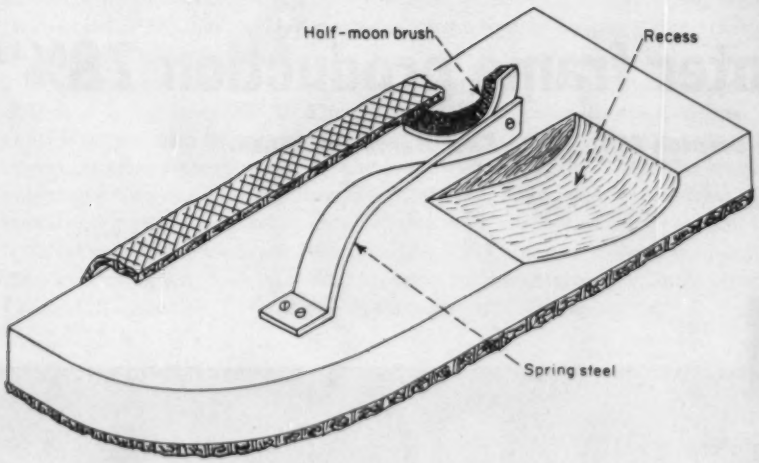
The beam barrels were only 4 ins. in diameter; so we had five strips of wood fitted over the barrel and fastened with countersunk screws. The wooden barrels were then turned down to 5½ ins. in diameter, and a ¾-in. groove was cut lengthwise in the barrel.

When yarn is started on the beam, the ends are fastened with gummed tape. A ⅜-in. wooden stick is placed against the yarn at the tape and forced into the groove in the barrel. The warp ends are held securely; and after several revolutions of the larger barrel, all of the ends have the same tension. (K-3502)

Drawing-Frame Dog Is Made From Old Gear

We were in a hurry to erect some used Saco-Lowell drawing frames when we discovered that one of the dogs for the full-can knock-off motion was missing. No spare dog was available, and we didn't want to hold up production until one could be secured.

I made a dog from an old Woonsocket speeder bobbin-shaft gear by removing everything from the hub except one spoke and two teeth. A notch sawed in the spoke serves as the trigger. This homemade dog has been in use now for five years. (K-3618) *D. C. Baynard, Wadesboro, N. C.*



Special Brush Cleans Suction Flutes on Spinning Frames

Suction-type flutes used on most spinning frames today pick up lint and stock when an end breaks. At our mill the addition of this equipment was very satisfactory, but we had to allow time for the spinner to clean the outside of the flutes at regular intervals.

The spinners were not too happy about this extra cleaning chore, and we found that our waste gouts increased after each cleaning. The increase was caused by the spinner knocking waste into the ends while the flutes were being cleaned with a hard brush.

To prevent this trouble, we tried cleaning on the doff only; but this practice slowed down patrolling by the spinners. Here is the solution we finally worked out:

A piece of spring steel was bent and attached to a conventional threadboard cleaner as shown in the diagram. A small half-moon brush a little larger than the diameter of the flute was attached to the loose end of the spring steel. Then a recess was cut in the top of the cleaner to permit the separators to rise without interference.

This modified brush permits the spinner to clean the flutes at the same time she cleans the thread board, and no time is lost. The special cleaner does as good a job as can be done with a hard brush; and very little, if any, gouty yarn is produced.

The spinners' attitude toward cleaning the flutes greatly improved, and the job is now well done. (K-3648) *Lewis H. Worthington, Opelika, Ala.*

Slats on Floor Increase Overhead-Cleaner Efficiency

When frame cleaners were installed over our roving frames, particles of lint and waste had a tendency to collect between the cans at the rear of the frames. These cans were placed more or less haphazardly behind the roving frames in an irregular pattern, and the air currents did not clean between them satisfactorily.

We increased the efficiency of our overhead cleaners by nailing narrow slats (arrow) to the floor in the area where the cans are placed. These slats keep the cans lined up behind the proper drafting section and provide enough space between the rows of cans to permit the air currents to penetrate without interference.

In the photograph above, the cans have been separated so that the slat can be seen. (K-3607) *Parkdale Mills, Inc., Gastonia, N. C.*

Hold Small Parts With Putty When You Are Soldering

It is tedious work to hold small parts with pliers or the fingers while you are soldering them. A box of putty kept on the workbench will solve the problem.

Take a piece of putty, flatten it, and stick the ends of the parts into the putty while you are soldering. When the job is done, the putty can be put back in the box for future use. (K-3413)

Stop-Motion Pilot Light Soon Pays for Itself

The plugs on the stop-motion circuits on our knitting machines occasionally become loose, and sometimes they drop out.

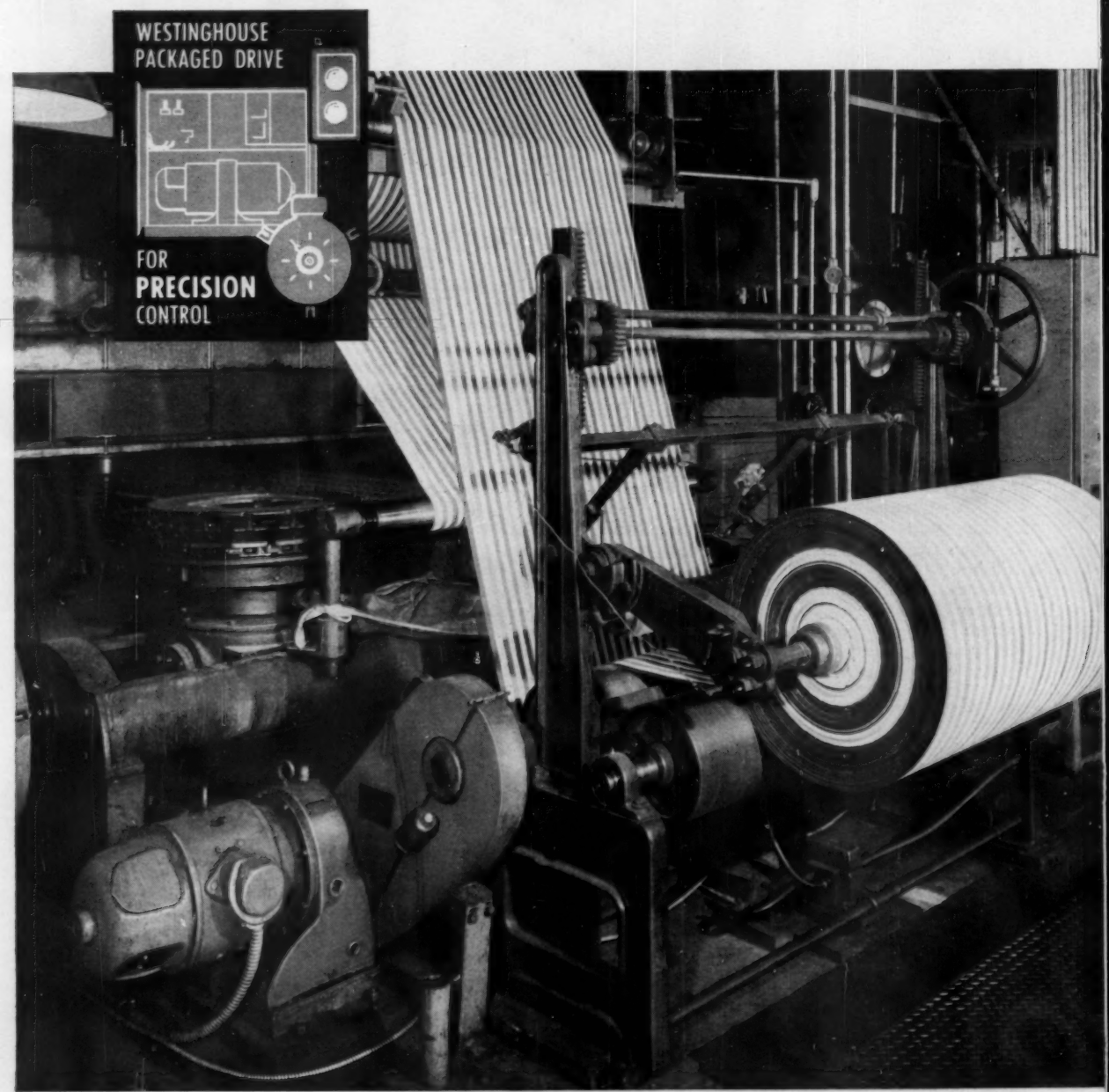
Our knitters rely so much on the efficiency of the electric stop motion that the machine usually keeps running when this fault occurs, and a yarn breaks or runs out. The result is usually a bad smash and lots of trouble.

This trouble can be avoided by installing a small pilot light in a prominent position at the front of the machine. The light is wired to the stop-motion circuit so that the light goes off if the plug is disconnected in any way.

The knitter can now glance down the alley and rapidly check to see if machines are running without stop motions. (K-3353)

"Westinghouse AV-DRIVE jumped tenter frame production 78%"

says Plant Engineer, Hampton Mills, Inc., East Hampton, Mass.

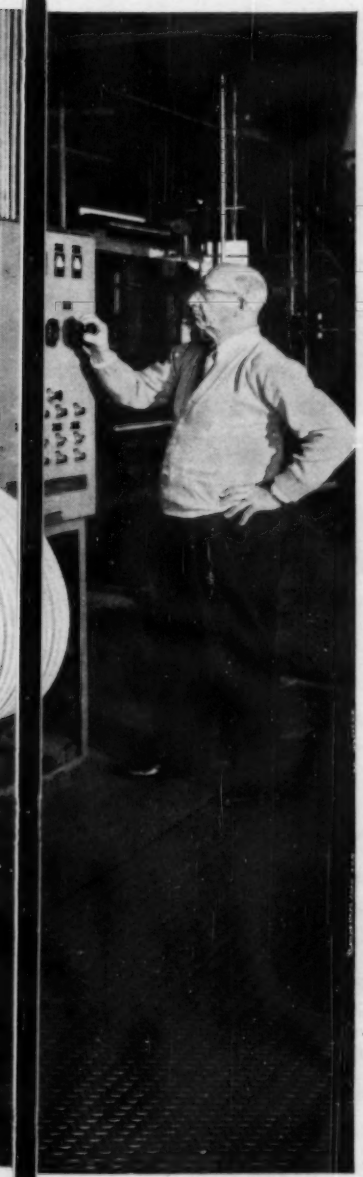


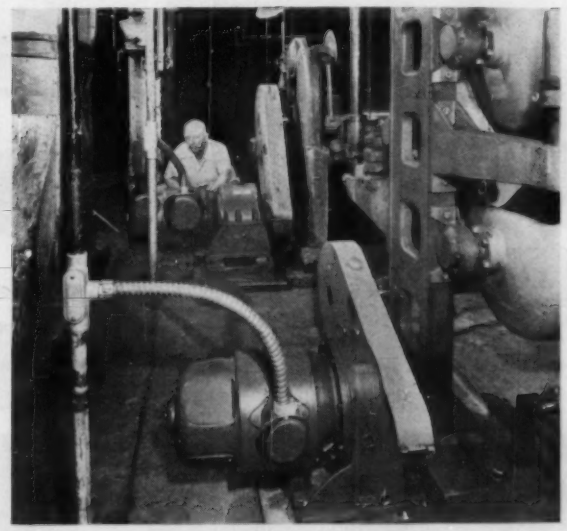
← For more data, write this page number on Reader-Service card.

"The Butterworth Tenter Frame with Westinghouse AV Drive achieves a maximum potential of 160 yards of cloth per minute. Former machines were limited to 90 yards per minute," states Hampton's plant engineer. "When the plant is in full-scale production, this machine operates 22 hours a day. We can anticipate production of 145,200 yards of cloth daily for a weekly output of more than three-quarters of a million yards."

"The motors in this textile finisher range vary from 20 to 30 hp, with gearmotor output varying from 230 to 520 rpm. AV Drive provides the precision speed control to maintain the specific tensions. Pushbuttons on the control panel permit operation of any combination of the section drives at one time. We know from experience that our Westinghouse electrical equipment requires the least maintenance and gives us the best service," states the Hampton chief electrician.

To learn how the versatile Westinghouse AV Drive can make your production more profitable, call your local Westinghouse representative or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-22017





Here Hampton's chief electrician checks two of the five Westinghouse d-c drives used on the tenter frame. Rear motor controls the starch mangle as cloth is pulled from the bleach house. The 3-hp gearmotor in the foreground drives the eight steam-heated drying cylinders that predry the cloth with 35 pounds of steam.

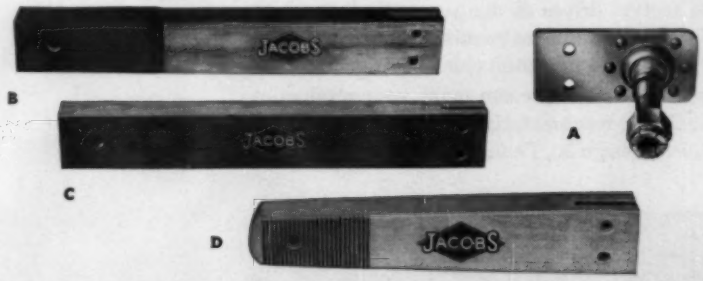
AV Drive provides on-the-spot conversion of plant distribution system's a-c voltage to the required direct current for precision control of the drive motors.

YOU CAN BE SURE...IF IT'S

Westinghouse

Sweepsticks and Connectors

by JACOBS *For Maximum Loom Efficiency*



B

C

A

D

A. VAN-DAR HEAD

A replaceable rod end bearing for all types of JACOBS sweepsticks. Allows close fit on pick arm stud and avoids hole elongation to give a pick that is absolutely even. Heads and bodies are individually replaceable.

B. RUBBERWELD

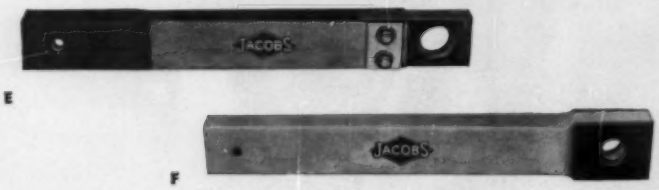
Patented construction of chemically bonded plyweld and neoprene gives the smoothest, most resilient pick known to the industry.

C. RUBBERIZED FABRIC

Molded rubber combined with fabric. Uniform consistency assures maximum strength and length of life.

D. HICKORY

Made of highest grade stock. Economical and long-wearing.



E

F

E. RUBBERWELD (with plastic head)

Has removable head of high-impact plastic. Body is long-wearing, resilient, and replaceable.

F. REINFORCED CANVAS

High quality Army Duck reinforced by plastic blocks on each side of stud hole for long wear.

The Bullard Clark Company

SOUTHERN DIVISION Charlotte, N. C.

JACOBS

NORTHERN DIVISION Danielson, Conn.

G

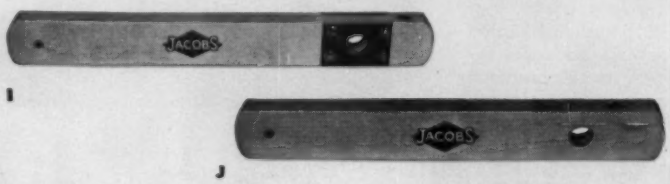
H

G. RUBBERIZED FABRIC

Molded cloth and rubber. Reinforced at stud hole by plastic plates and built up at lug hole for improved performance.

H. LAMINATED

Constructed of highest quality Plyweld or Pakweld, in regular design or streamline style for lighter weight.



I

J

I. REINFORCED HICKORY

Made of highest grade hickory with fiber reinforcements at the stud hole for longer wear.

J. HICKORY

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NO REPEATS . . . Listed here for November are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Conditioner—For introducing moisture to fabric, paper, other products moving continuously through a processing range. Bulletin 59. J. O. Ross Engineering Corp. **(F-1)**

Reeling machinery—For producing hanked yarns. **Predetermined length** counters, normal or **cross-reeling** motion. Prince-Smith & Stells Ltd., **(F-2)**

Sliver leveler—For gill boxes. Auto-leveller installations, **advantages** described in catalog from Prince-Smith & Stells Ltd. **(F-3)**

Finishing machinery—Line of calenders, pads, tenters, printing machines described in bulletins from Elmo International. **(F-4)**

Woolen card—Improved 84-in. model for all types of wool provides increased production with little increase in space. Davis & Furber Machine Co. **(F-5)**

Slub catcher—Electronically actuated, adjustable attachment for winders for all types of yarns. Qualitex. **(F-6)**

Pneumatic conveyors—For any type of loose, dry material requiring intra-plant transportation. Bulletin 530. Dracco Corp. **(F-7)**

Color-matching lights—Combination fixtures that provide uniform light at 7500° K or 2500° K for comparative purposes. Macbeth Daylighting Corp. **(F-8)**

Production-time indicator—For checking actual operating time of many machines. Moses Electronics Co. **(F-9)**

SUPPLIES & CHEMICALS

Silicone intermediates—For manufacturing lubricants, emulsifiers, finishing agents, flame retardants, others. Bulletin RSF-1055, Silicones Dept., Union Carbide International Co. **(F-10)**

Print-paste thickeners—Derived from alginic acid. Several types for various purposes described in booklet from Croda, Inc. **(F-11)**

Petroleum sulfonates—Descriptive material on production and many uses of these materials in booklet from L. Sonneborn Sons, Inc. **(F-12)**

Slime control—How to control slime and prevent corrosion in air-washing systems. Report B-6686. Oakite Products, Inc. **(F-13)**

High-purity sulfite—Sodium sulfite reagent for laboratory-control work. Specifications from Fisher Scientific Co. **(F-14)**

Knitting-machine lubricants—Special products for circular, full-fashioned machines, needles, troughs. Reading Testing Laboratories, Inc., Dept. 311. **(F-15)**

Bulk-gas delivery system—Provides

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convenient method of handling gases used in industry. Catalog 450. Air Reduction Co., Inc. (F-16)

Silicone grease—For high-temperature, high-speed applications. Folder 6-209. Dow Corning Corp. (F-17)

Synthetic size—For filament acetate warps. Water-soluble, uniform product described and formulations suggested in Bulletin T20-6 from Monsanto Chemical Co., Textile & Paper Resins Dept., Plastics Div. (F-18)

1, 2, 6, Hexenetriol—For use as an intermediate or as a humectant. Complete properties and suggested applications in Bulletin 1, 2, 6, Hexenetriol F-40,066, from Union Carbide Chemicals Co. (F-19)

Optical bleaches—Description of various types and application data provided in booklet from Geigy Dyestuffs Div. of Geigy Chemical Corp. (F-20)

MAINTENANCE & ENGINEERING

Pneumatic valve actuator—Provides remote control of steam or fluid movement in pipelines. Available in three standard sizes with three spring ranges, 3 to 15, 5 to 25, and 6 to 30 psi. Hammel-Dahl Co. (F-21)

Power cable—For underground, aerial, or conduit installation. Three types of insulation, voltages to 5,000. Bulletin RR-10. Triangle Conduit & Cable Co., Inc. (F-22)

Gauge illuminator—Provides solid wedge of light over gauge from 58-w. bulb. Data Unit 300 from Jergusen Gage & Valve Co. (F-23)

Diesel engines—For pumping, power-generating purposes. Six or eight cylinders, 580 to 2,150 hp. Bulletin 111 from White Diesel Engine Div., White Motor Co. (F-24)

Flexible coupling—Cushioning element smooths power transmission, accommodates for misalignment. For 1- to 4½-in. shafts. Bulletin A669, Dodge Mfg. Corp. (F-25)

Busway—For lighting installations, power tools. Available in 2-, 3-, or 4-pole construction. Bulletin GEA-6170 gives performance details. General Electric Co. (F-26)

Stainless steel—General utility type, nickel-free straight-chromium grade. Sheet form 48 and 36 ins. wide, various gauges. Washington Steel Corp. (F-27)

Hot-water controls—For high-temperature hot water. Auxiliary equipment for all phases of high-temperature gas

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Locking toggle switches—Have a positive lock that holds toggle lever in position. A definite pull is required to change toggle-lever position. Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-29)

Sealless pumps—For corrosive chemicals, abrasive slurries. Capacities to 40 gals. per min. at temperatures from —4° to 400° F. Plastic or stainless-steel construction. Vanton Pump & Equipment Corp. (F-30)

Pillow blocks—Spherical roller-bearing types described with tabulated data on capacities. Bulletin A668, Dodge Mfg. Corp. (F-31)

Pipe-bending data—How to bend tubing and pipe by several different methods. Bulletin TDC from Babcock & Wilcox Co. (F-32)

Water filter—For general industrial purposes. Catalog lists specifications, applications. Green Bay Foundry & Machine Works. (F-33)

Bushings—Malleable split-taper compression bushings for many purposes listed in Bulletin HB-101-A from Browning Mfg. Co. (F-34)

Pressure regulators—Bronze steam-pressure regulators of improved design, in ½- to 2-in. sizes. Crane Co. (F-35)

GENERAL

Factory equipment — Cabinets, enclosures, intercom systems, related items listed in catalog from General Industrial Co. (F-36)

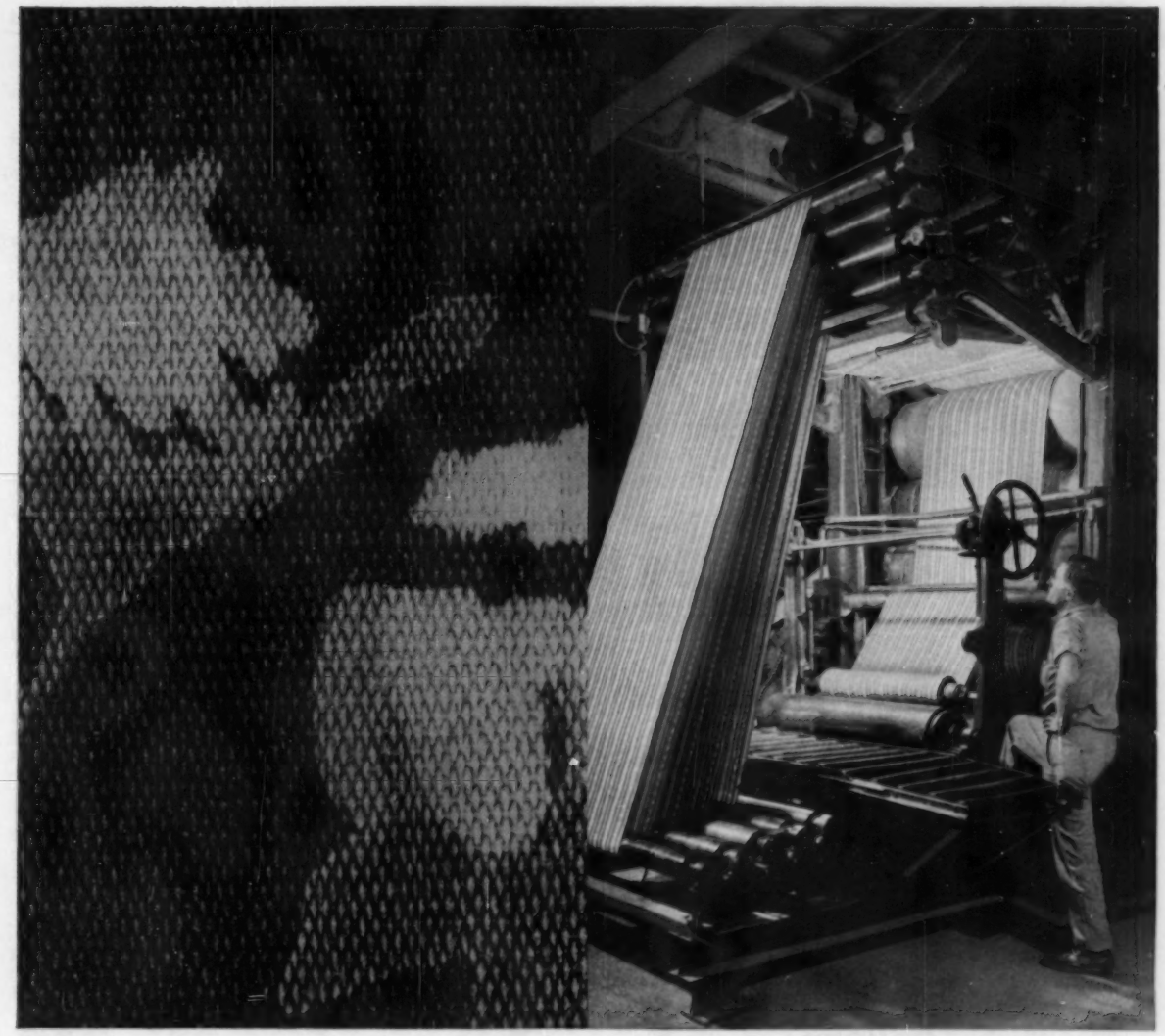
Office filing methods—How filing systems should be set up; suggested equipment. Booklet LBV-800, Remington Rand Div., Sperry Rand Corp. (F-37)

Industrial equipment—Trucks, chairs, cranes, ladders, miscellaneous items listed in catalog from Precision Equipment Co. (F-38)

Pneumatic conveying—By pressure or vacuum; ¾ to 10 tons per hr.; hose sizes 2 to 7 ins. Bulletin 143-B. Spencer Turbine Co. (F-39)

Fire extinguishers — Hand-held and wheeled models; foam, soda-acid, CO_2, powder, Pyrene types. Booklet C-140 from Pyrene, C-O-Two Div., Fyr-Fyter Co. (F-40)

Safety equipment—All types of protective equipment from masks to barrel lifters listed in Catalog 10 from Gen-



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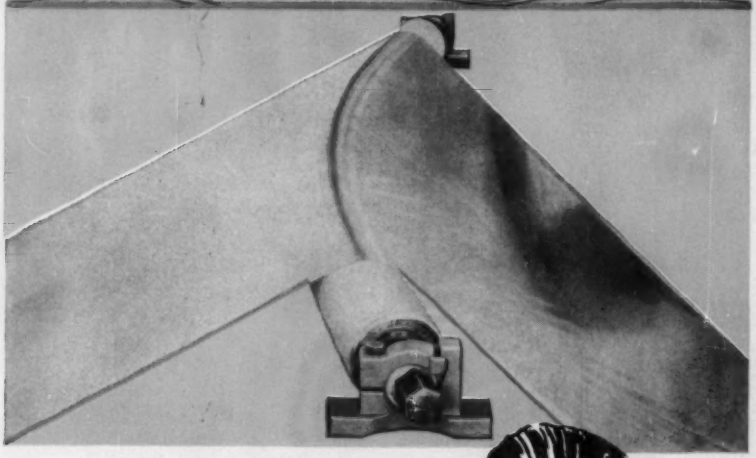

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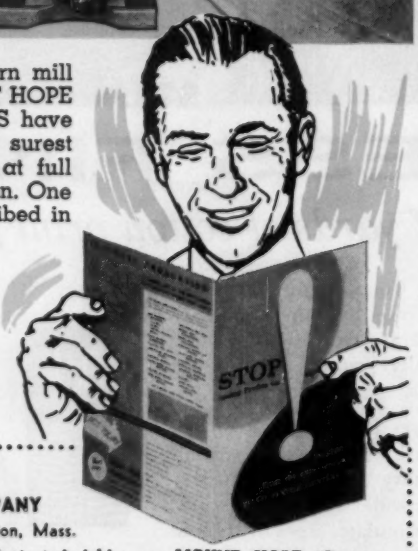

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eral Scientific Equipment Co. (F-41)

Floor maintenance—For terrazzo and oxychloride floors; general instructions on methods and materials. Multi-Clean Products, Inc. (F-42)

Adjustable shelving—Steel units in six basic types; lockers, cabinets described in SE-5 folder from Penco Metal Products Div., Alan Wood Steel Co. (F-43)

Efficient building maintenance—Data on how to determine cleaning costs, figure workloads, establish proper procedures. Handbook from Advance Floor Machine Co. (F-44)

Heavy-duty fork truck—Specifications on 20,000-lb. capacity pneumatic-tired truck for outside work presented in brochure from Clark Equipment Co. (F-45)

Engineering services—Machines, processes, operational procedures: how they are developed for industry told in folder from Associated Engineers, Inc. (F-46)

Engineering services—Machine and equipment design, personnel training in operation, other services listed in brochure from Teller Co., Contract Engineering Div. (F-47)

Factoring guide—Booklet explains factoring as a means of facilitating business transactions. William Iselin & Co., Inc. (F-48)

Electric trucks—Walkie- and rider-type trucks with improved control built in handle that provides dynamic braking, describing in Circular 34H from Lewis-Shepard Products, Inc. (F-49)

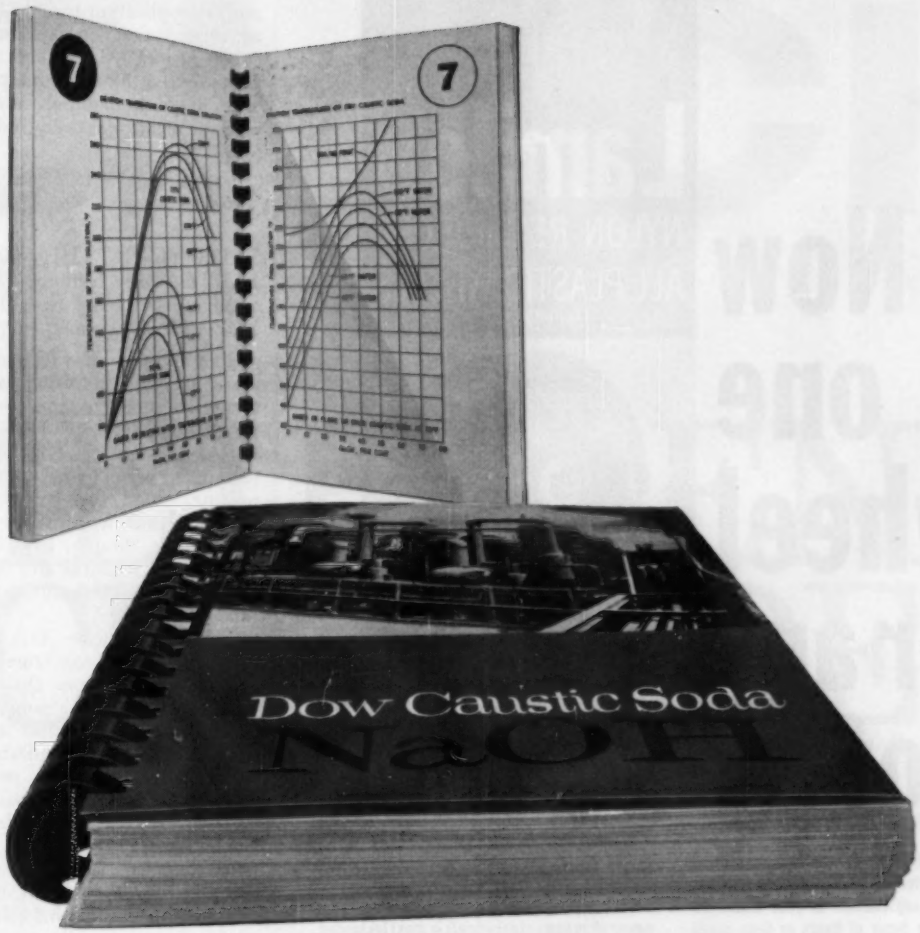
Floor surfacing—Special-formula concrete surfacing for heavy-duty use described in folder from Kalman Floor Co. (F-50)

Textile World

BOOK REVIEWS

ENCYCLOPEDIA OF CHEMISTRY, edited by George L. Clark and G. G. Hawley; Rheinhold Publishing Corp., 430 Park Ave., New York 22, N. Y.; 1060 pages, $19.50.

Subjects from abrasives to zirconium are collated in this volume. Articles cover almost every phase of chemistry



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This brand-new handbook is packed with information about caustic soda. It is organized and indexed for reference use. Contains specific data about the manufacture of caustic soda, chemical and physical properties, forms and grades, and methods of analysis—plus information about the economics of caustic soda usage and methods of handling and storage.

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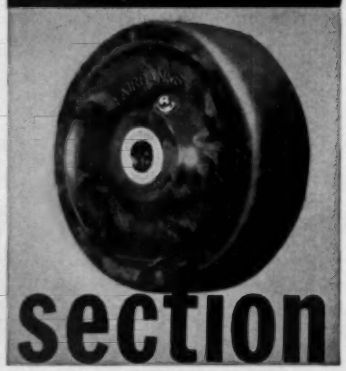

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and its application to industry, as well as related engineering and research subjects. Many qualified authorities contribute to this roundup of information about materials and methods used in practically every industry.

SATISFYING THE SALARIED EMPLOYEE; National Association of Manufacturers, 2 E. 48th St., New York 17, N. Y.; paper, 64 pages, 50¢.

The number of white-collar workers is steadily increasing as manufacturing methods require less and less physical labor.

How to keep this growing group of technical, professional, clerical, engineering, sales, and research people happy at their work is the subject of this volume. Studies have been made in the areas of status and recognition, compensation, communications, and supervision.

Findings indicate that employees are much more concerned with the more-abstract factors than they are with compensation—a point that is becoming increasingly clear as more attitude surveys are undertaken. The book emphasizes that management can lose the loyalty of its salaried workers very quickly unless the personal elements of recognition, a feeling of belonging, security, and a sense of accomplishment are present in the worker's attitude toward his job.

MARKET GUIDE FOR LATIN AMERICA; American Foreign Credit Underwriters Corp., 253 Broadway, New York, N. Y.

One hundred twenty thousand commercial and industrial firms are listed in the 1957 edition of this market guide, which covers South and Central America as well as Mexico, Cuba, Puerto Rico, and the West Indies.

Complete firm names and addresses are given, and the products the firms handle are noted. Capital and credit ratings indicate the size and performance records of the listed firms.

There is a logical grouping of firms according to their line of business; and there is much supporting data and information about each country, including maps, distributing zones, marketing centers, power facilities, altitude, credit rules and regulations, and local business practices.

The volume is valuable to exporters and importers alike who are interested in dealing with an area that is developing rapidly.

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Stauffer can also supply you with Carbon Bisulfide, Perchlorethylene, Trichlorethylene, Carbon Tetrachloride and Chloroform. A new brochure on Stauffer Chlorinated Solvents will shortly be ready for mailing. Kindly advise on your letterhead if you would care to have a copy.

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CONTINUED FROM PAGE 145

By instructing section men and oilers to cut off and replace aprons as soon as a flag showed, downtime was reduced to less than 1 hr. per shift. The system also cut the number of idle spindles to an average of 40 per shift instead of 60. Production loss dropped to $2,400 per year instead of $16,200.

Section Men Resisted at First

In the beginning, the section men and oilers were reluctant to cut off aprons that cost 72¢ each. Many of these men were old-timers trained in the era of 10¢ cotton; and in those days, a man thought twice before cutting off an apron. These men had to be convinced that it usually is cheaper to cut off a doubtful apron than to risk several hours of production loss of salable yarn.

The accompanying table was prepared to show the relative cost of production loss caused by replacing steel-roll aprons on schedule versus replacing them as needed.

Written Instructions Are Used

The table and some tips on apron maintenance were mimeographed and passed out to all section men, overhaulers, oilers, and second hands who had anything to do with the operation or maintenance of steel-roll aprons. Here are the instructions that were given to maintenance personnel.

1. Replace every doubtful steel-roll apron during overhauling. A new apron represents only a fraction of the cost of yarn loss from two idle spindles. While frames are being overhauled and steel rolls are out, aprons can be replaced easily without splicing or gluing.

2. When you are installing aprons, be sure to put the apron in right side up. If you don't, the apron will turn backwards and the splice or lap will eventually break loose and cause bad work. No special precaution is needed for installing endless aprons.

Stretch Shrunken Aprons

3. Lapped or glued aprons sometime require a mild stretching between the fingers before they are installed. This action is necessary because the glue tightens up when it dries and may cause the apron to shrink slightly at the joint.

When shrinking occurs, the exposed corners of the apron lap offer resistance to any part of the roll assembly that they touch; and this friction will weaken the splice until it comes apart. Then you have an apron to replace and two spindles down. Cut off sharp corners with your knife.

4. When you are gluing two ends of a lapped apron together, do not press the ends too hard. Press the ends just hard enough for the glue to form a bond. If you tighten the apron-clamp screw too much, the ends will slip out of position and glue may be forced outside of the edge of the lap.

The result is a splice with crooked, jagged corners or a splice that does not have enough glue to hold it together. Apron failure and spindle downtime are sure to occur.

Oil and Water Damage Aprons

5. Keep oil, water, and stand hooks away from aprons. Some glues are not waterproof, and oil or water will cause the glue to come loose at the splice.

The slightest scar made by a stand hook can cause unevenness and ends down.

6. Travel-worn aprons are easily

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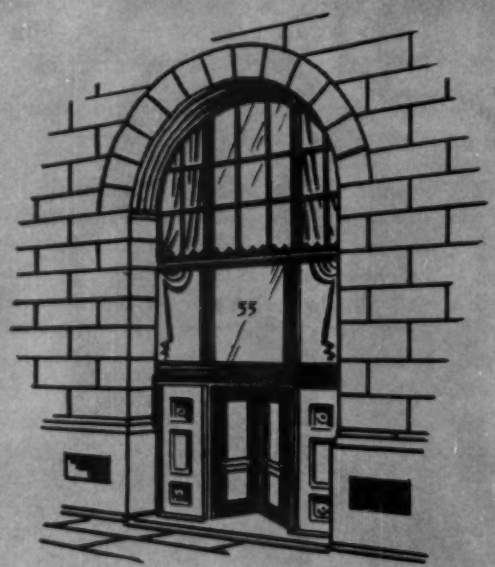

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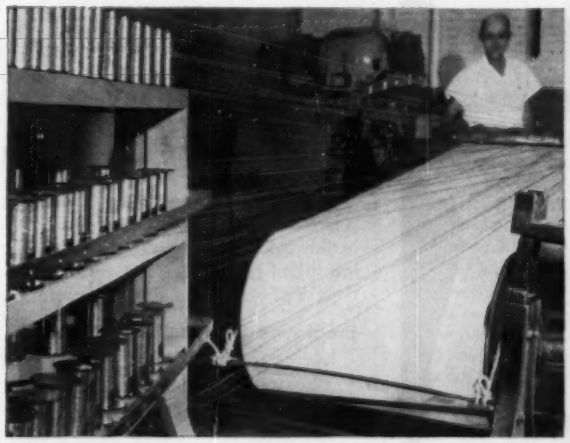
Here's how metallic yarns made with MYLAR® helped Callaway Mills solve a production problem... and increase sales

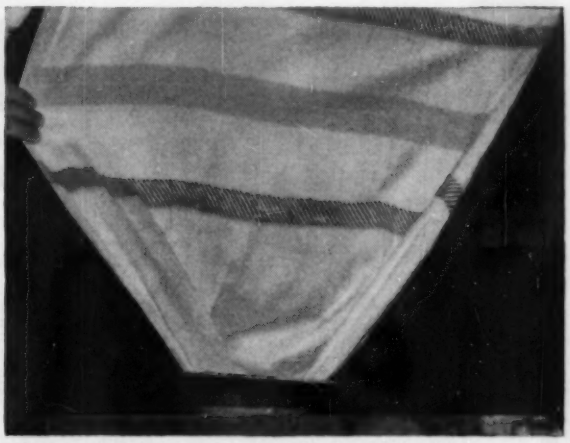
E. Douglas Miller
Callaway Mills

"For years we were looking for a practical metallic yarn to use as a decorative trim on towels," reports E. Douglas Miller, Towel Division Sales Manager of Callaway Mills. "After the new metallics made with 'Mylar' became available, we conducted extensive tests on bleaching, dyeing and production, and then tests on the finished product in the home.

"Our early confidence in the sales value of metallics in towels has been vindicated. These colorful towels, which complement the décor of modern homes, have been in constant demand."

Because non-tarnishing metallic yarns made with Du Pont "Mylar"* polyester film are thinner, their yield in 1,000 lineal yards per pound can be 1½ to 3 times greater than older types of metallics. When comparing costs on a lineal-yard basis, you'll be surprised at the close comparison. For a booklet outlining the new qualities found in metallic yarns made with "Mylar", send in the coupon below. Be sure to mention your specific type of fabric or equipment.





Metallic yarn made with MYLAR can be run unsupported.

"Mylar" is 50 to 200% stronger, with 10 to 15 times the flex life of other films used for metallic yarns. The exceptional strength found in metallic yarns made with "Mylar" means smooth operation on looms and knitting machines.

Metallic yarn made with MYLAR will stand up under wash tests using chlorine base.

Metallic yarns made with "Mylar" have the chemical resistance to pass 20 washings under the AATCC Test #3. What's more, metallic yarns made with "Mylar" resist water, practically all solvents and most acids and alkalies.

MYLAR® MAKES THE MODERN DIFFERENCE IN METALLICS!

Metallic Yarn made with DU PONT MYLAR® POLYESTER FILM

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Film Dept., Room TW-11
E. I. du Pont de Nemours & Co. (Inc.)
Wilmington 98, Delaware

Please send me Du Pont's new 20-page booklet on metallic yarns made with "Mylar" polyester film.

*Name*_____ *Title*_____

*Firm*_____

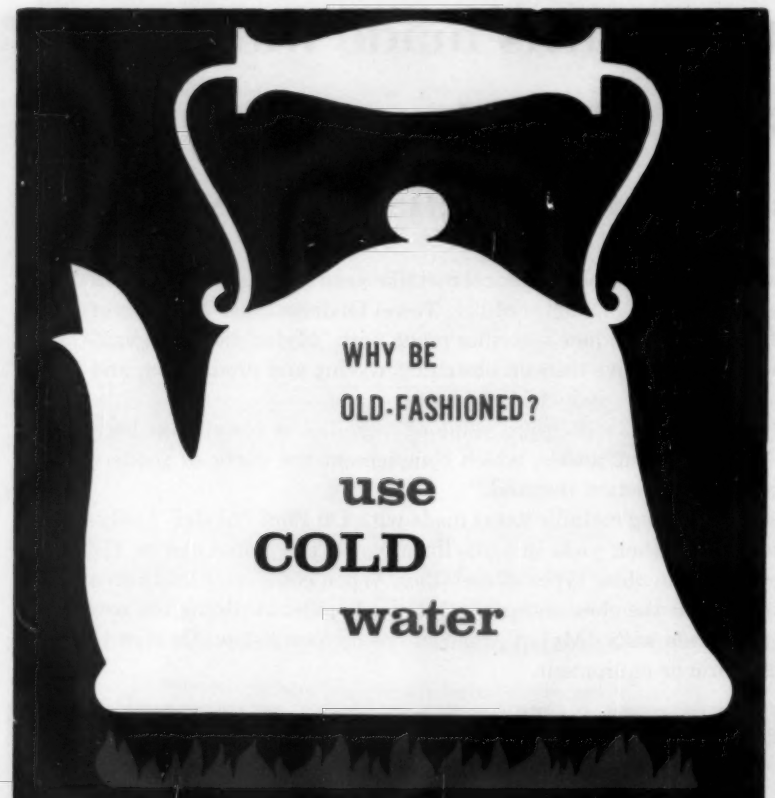
*Address*_____

*City*_____ *State*_____

*Specific interest*_____

* "Mylar" is a registered trademark for Du Pont's brand of polyester film. DuPont manufactures the base material, "Mylar"—not finished metallic yarns.

For more data, write this page number on Reader-Service card. →



That's right, **UCON** BRAND **Textile Lubricants**

are soluble in cold water

That means that costly heating and emulsifying procedures are eliminated. Just stir Ucon water-soluble textile lubricants into cold water and they're ready to use on

• woolens • wool-synthetic blends • synthetic fibers

Then, when their work is done, they can be removed with a cold water rinse.

UCON Textile Lubricants

• control friction between fibers • do not cause dye resists • do not become rancid • minimize static • do not interfere with carbonizing • are efficient at only 1 to 3 per cent of fiber weight

Write for complete information on how Ucon textile lubricants have proved effective through years of mill use and regular production.

UNION CARBIDE CHEMICALS COMPANY

Division of UNION CARBIDE Corporation

30 East 42nd Street, New York 17, New York

"Ucon" is a registered trade-mark of Union Carbide

recognized by the ridges formed by the steel-roll flutes. These aprons usually are soft, and they don't grip the fibers well. This mill can't afford to run worn-out aprons.

7. Cracked aprons usually are caused by water from humidifiers or sprinklers. Lint sticks in the cracks and causes slubs, gouts, and other imperfections. Replace cracked aprons as soon as you spot them.

Prevent Chokes From Forming

8. Chokes cause a great deal of apron damage. Try to prevent chokes from forming by checking the cleaning of your frames. Be sure that the spaces around the edges of the apron are well cleaned. At the same time, see that the cleaning operator does not gouge the apron with the air-driven roll picker.

9. When chokes occur, dismantle the drafting assembly and clean out the choke. Don't cut off the apron unless it is damaged, lumpy, or out of shape. If the splice is coming loose, cut the apron off and give it to the second hand for inspection.

FIRE-PROTECTION PROGRAM

CONTINUED FROM PAGE 113

During emergencies, the company's telephone switchboard is a communication center. And in addition to the interplant telephones, there's an audio-voice call system.

Employee Smoking Is Controlled

Magee maintains a strict policy of no smoking throughout nonoffice plant areas except in smoking houses. These smoking structures are 4x5-ft. ventilated booths 8 ft. high. They have exit doors and viewing windows and are made of sheet steel.

Employees on each shift determine the frequency of smoking per man and the length of time to be spent in the smoking house each visit.

Norman W. Hoffman, Magee's chief engineer, says this about the fire-safety program, "We have not let monetary considerations influence our program. We have made our plant as safe from fire as possible and have provided the best equipment to cope with flash fires that occur in spite of our preventive program.

"In developing the program, we (1) evaluated the suggestions of our safety personnel, (2) worked closely with our insurance underwriters, FIA and FM, and (3) asked for recommendations from Bud Bretz, a representative of Walter Kidde & Co., Inc."

Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

"Volumetric Dilution" Assures Highest Accuracy in Brine Make-Up

For years, the process of making dilute brine has required careful manipulation, frequent salometer readings, and close supervision. Today, however, dilute brines of any strength whatever can be made up quickly and accurately, by means of a system which gives consistently dependable results. This system, which uses International's Lixate Equivalent formula, is known as "Volumetric Dilution." It needs no trained technicians, a minimum of attention, and no salometer readings.

How "Volumetric Dilution" works. Since a dilute process brine can be considered a mixture of fully saturated brine and pure water, it is necessary in each case to know the ratio between these two components. This ratio can be quickly determined by means of International's Lixate Equivalent—which is essentially the amount of fully saturated brine needed to bring water to a brine of correct salometer reading.

The first step, after determining how much finished brine is needed, is to indicate this amount on the tank wall with a simple marker (cleat, nail, paint, etc.). Then, with International's Lixate Equivalent formula, the exact amount of 100%-saturated brine needed for the finished brine mixture is quickly computed. A second marker is then placed to indicate this lower level, and the tank is ready for the brine-dilution operation. Fully saturated brine is poured up to this lower tank marker, and water is added until the liquid level reaches the top marker.

For example: a tank is to hold a 10-ft. depth of 60° S. brine. To find exactly how much fully saturated brine should first be poured into the empty tank, the desired finished brine depth (10 ft.) is multiplied by the Lixate Equivalent (which, for 60° S. brine, is 0.5570). Answer: 5.57. In other words, fully saturated brine must be poured to a level 5.57 ft. above the tank bottom. When water is added to the 10-ft. level, the result is a supply of 60° S. brine.

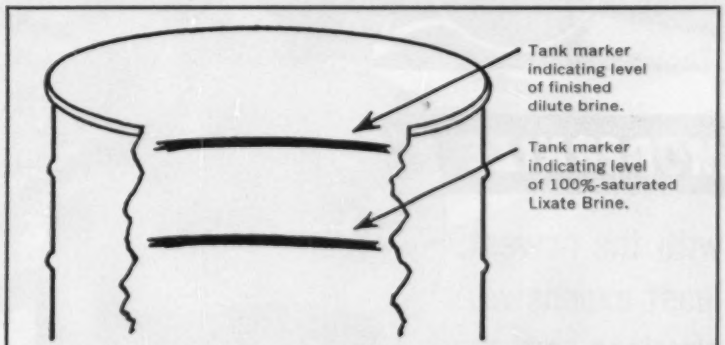
International's Lixate Equivalent formula works equally well when brine volume is measured in gallons. If a tank is to hold 500 gallons of finished brine, the amount of fully saturated brine needed is 278.5 gallons (500 x 0.5570). This amount of fully saturated brine when mixed with water, will make 500 gallons of 60° S. brine.

This system of "Volumetric Dilution" can be put into operation quite simply: 1. There must be a supply of 100%-saturated brine (which is made automatically in the Sterling Lixator). 2. The brine make-up tank, whatever its cross-sectional shape, must have vertical walls, so that the horizontal area remains constant. 3. Liquid level marks are needed on the tank walls.

Two of these requirements are part of every Lixate Brine-Making Installation. A supply of fully saturated brine is always on hand in the Lixator, and dilute brine can be made up in any existing brine storage tank. Thus the only necessary additions are the brine-depth markers on the tank wall.

"Volumetric Dilution," which gives such positive accuracy for such little time and effort spent, will work *only when the brine used is 100%-saturated.* If the brine is, for example, 95%-saturated, the Lixate Equivalent formula won't apply, and the finished brine won't have the desired strength.

There is a Lixate Equivalent for every salometer reading of dilute brine—from 1° S. (Equivalent 0.0083) to 99.6° S. (Equivalent 0.9945). To get Lixate Equivalent data, simply contact International. No cost or obligation.



Cutaway view of tank ready for accurate brine make-up with "Volumetric Dilution"

The most effective brine for accurate "Volumetric Dilution" is Lixate Brine—always fully saturated, always crystal-clear. This brine is made automatically, and self-filtered automatically, in the Sterling Lixator. The Lixator, which needs no attention, also stores both salt and brine. It is widely used today in plants of every type. There are many different kinds of Lixator installations—Storage Lixators, Silo Lixators, Sterling Model Lixators—in different designs and sizes to suit any plant layout.

TECHNICAL SERVICE WITH YOUR SALT

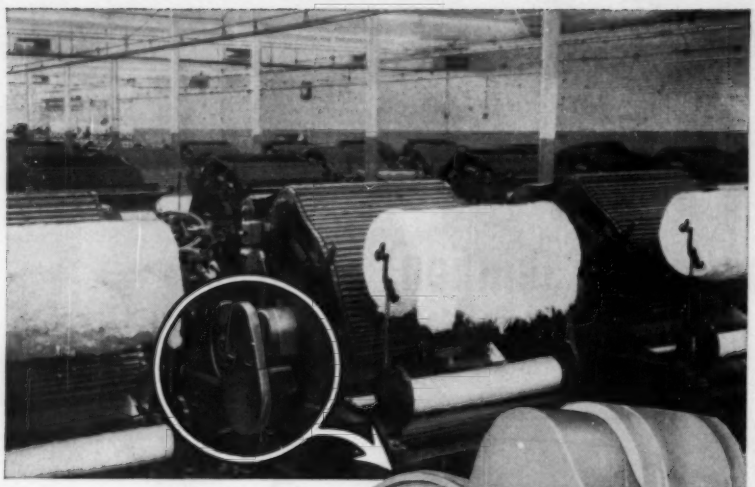
Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt you use. International produces both Sterling Evaporated and Sterling Rock Salt in all types and sizes. And we also make automatic dissolvers in metal or plastic for both kinds of salt. So we can recommend the type and size of salt most perfectly suited to your needs.

If you'd like the assistance of an International "Salt Specialist" on any problem concerning salt or brine—or further information on "Volumetric Dilution"—just contact your nearest International sales office.

International Salt Co., Scranton, Pa.

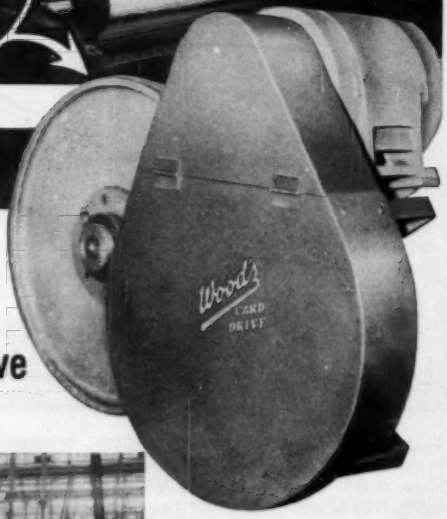
Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa; and Richmond, Va.

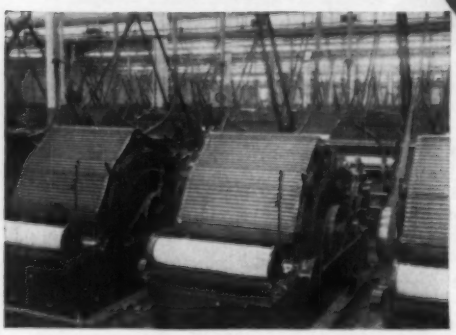
FOR INDUSTRY, FARM, AND THE HOME—
STERLING SALT
PRODUCT OF INTERNATIONAL SALT CO., INC.



MODERNIZE

with the newest, least expensive, simplest card drive on the market!





SEE FOR YOURSELF! . . . just compare the photo at left with the one above, *after* WOOD'S Individual Card Drives have been installed!

Here's why: • Maintenance of flat belts, lineshafts and pulleys is eliminated. • Lineshaft power losses are eliminated. • Safer working conditions are provided for personnel by eliminating belt hazards. • Increased production and more uniform product are assured by eliminating belt slip. • Reversal for grinding is easily accomplished electrically. • Flexibility in layout of the card room is permitted. • In case of motor or mechanical failure only one card is decommissioned. • Quality is improved by reducing static and amount of lint and dirt stirred up in the atmosphere. • Card room appearance and level of illumination are improved. • Electric overload protection reduces mechanical breakdown. • Card room is easier to clean. • Improved quality and quantity of production is obtained by better control of operating speeds.

Ask for Bulletin 6100

Wood's

T. B. WOOD'S SONS CO.

CHAMBERSBURG, PA.

CAMBRIDGE, MASS. • NEWARK, N.J. • CLEVELAND, OHIO • ATLANTA, GA. • DALLAS, TEXAS

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FLANNEL PRODUCTION

CONTINUED FROM PAGE 116

cleaners to circulate more effectively, the Pneumafil ducts were especially designed with slanted sides.

The spinning frames put 5.5 oz. of 18.5s warp yarn, a typical number, on each bobbin. For this number, break factor is 2,200, twist multiplier 4.30, spindle speed 9,000 rpm., front-roll speed 155 rpm., break draft 1.34, total draft 24, and Brush evenness 70%. Ends down decreased from 50 to 25 per thousand spindle hours after the change-over.

For 5.40s filling, twist multiplier is 3.25, spindle speed 4,600 rpm., front-roll speed 190 rpm., break draft 1.24, and total draft 11. About 7 oz. of yarn is put on each bobbin. Ends down are about the same as before the changes were made; front-roll speed is 20% faster.

Doffing Is on Schedule

Carolina doffs spinning frames on schedule. Doffing time for each frame is figured by the overseer and posted on a special card. Doffers are required to follow the card exactly and report to the overseer in writing if frames get off schedule.

Spinners run eight sides of filling frames and 14 to 18 sides of warp frames. They pick their own rolls but do little other cleaning. The lower parts of the frame are blown off every 2 hrs.

Altogether, the carding and spinning improvements have increased production per manhour at least 30%.

VERGE PLATES

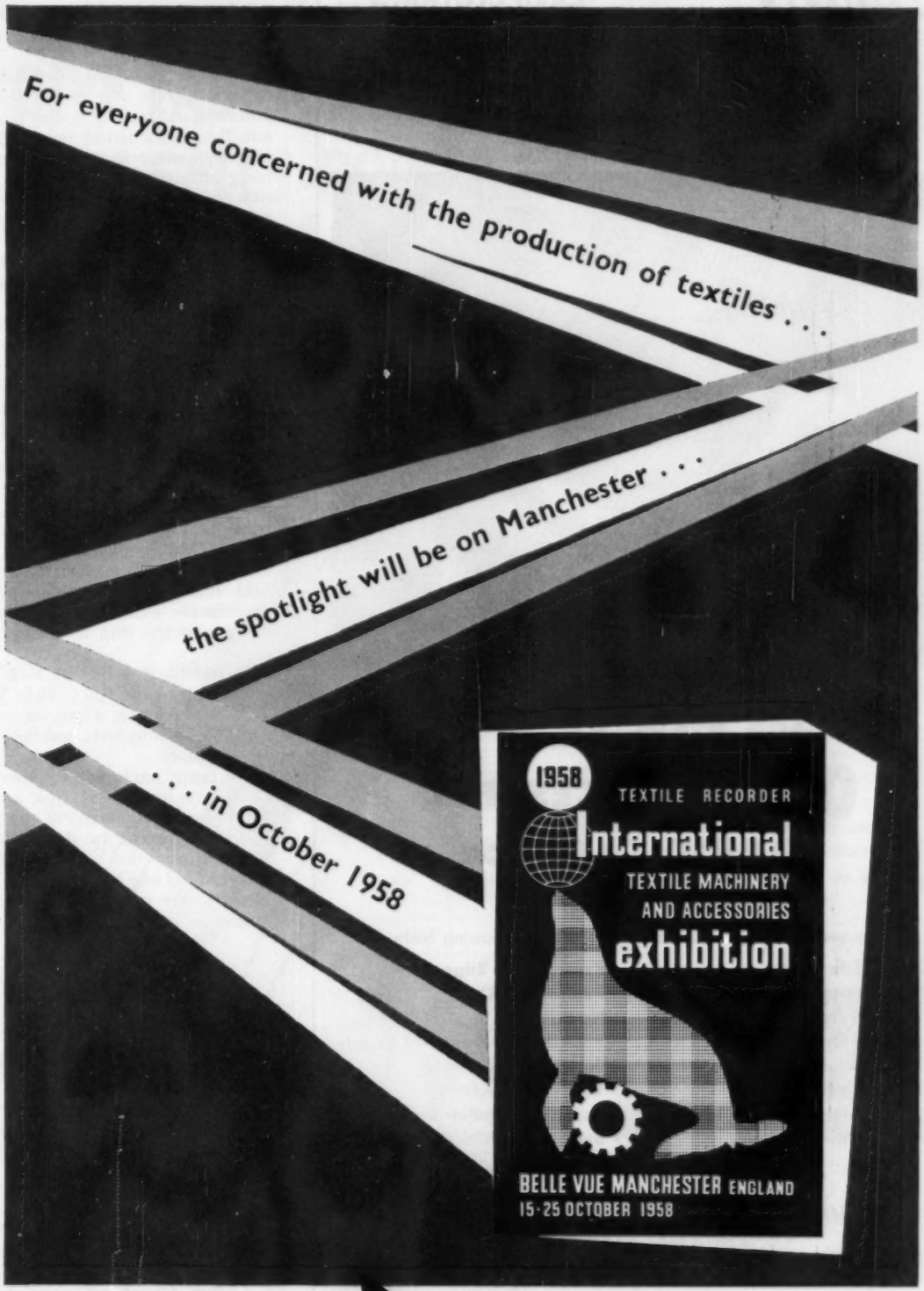
CONTINUED FROM PAGE 151

sive play between the slur cam and verge plate.

How Play Is Reduced

If there is more than 0.002-in. play on either side, the jack head must be loosened from the center bed on the side where the sinker play is greatest. This play can be reduced with the jack-head adjusting screw.

After tightening all the screws, check the machine on each side of the section, and the sinker play should be the same. When all sections have been checked and adjusted if necessary, reset the jack springs to their original position.



For details of the arrangements for visitors to this event write to the organizers . . .

TEXTILE RECORDER
(Machinery and Accessories) EXHIBITIONS LTD.
OLD COLONY HOUSE, SOUTH KING STREET, MANCHESTER 2

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Booth

Originators of **STRIP-O-MATIC*** **CARD CLOTHING**

SUPR-O-TAPE

THE FIRST AND ONLY SUCCESSFUL FABRIC TAPE FOR CONDENSERS

Two years of actual mill use testifies to these amazing facts:

- Longer Life
- Extra Strength
- Increase Production
- Improve Quality
- Surface Won't Crack
- No Oiling Needed
- Yarn Uniformity Improved
- No Stretch—Less Sag
- Keep Square Edges
- Retain Full Width
- No Breaking In
- Permit Wider Range of Counts
- Fewer Ends Down
- Easily Cleaned
- Endless or Continuous
- Belt Hooks Hold

• Not Affected by Emulsions

STRIP-O-MATIC* CARD CLOTHING *IN TWO TYPES
CONVENTIONAL CARD CLOTHING
QUALITY AND SERVICE FOR 65 YEARS

*Patented

BENJAMIN BOOTH COMPANY

ALLEGHENY & JANNEY STS., PHILA., PA.

Booth

RIO GRANDE COTTON

CONTINUED FROM PAGE 109

factor of quality resulted in a higher appearance grade during the current season.

Although growing and harvesting conditions were noticeable factors in providing outstanding grades this season, the installation of improved ginning equipment also is recognized as being of importance. Operating practices and careful selection of equipment were responsible to some extent for staple-length preservation.

The general use of lint cleaners for improving grades instead of excessive drying temperatures proved to be of increasing benefit to growers in the area. Growers are beginning to realize that fiber damage is inevitable when an attempt is made to do all the cleaning ahead of the gin stands and when excessive heat is used.

New Cleaners Are Being Tested

The eyes of the cotton industry, particularly the ginning segment, have been on the operations of the Rio Grande Valley gins for some time. It is here that gin manufacturers make field trials on new machinery; and experiments with dual or tandem lint cleaners in this area are being made regularly.

It is estimated that at least 10% of the gins in the Rio Grande Valley area are serving as a proving ground for these cleaning tests, and the results show promise.

In many instances, a second lint cleaner of the battery type provides cotton-grade improvement for seed cotton equivalent to that produced by one dryer, two overhead cylinder cleaners, and one burr machine. These cleaners may eventually be a partial answer to improved spinning quality.

KNITTED FABRICS

CONTINUED FROM PAGE 111

ton fabrics; acid and chrome dyes are used for wool jersey; and dispersed acetate and basic dyes are used on man-made fibers.

Wool jersey is fulled, washed, extracted, dried, decated, and calendered. A stripe-matching machine is used on striped fabrics to place stripes level.

Cotton fabrics are given a resin treatment to guard against shrinkage. The fabric is passed through a quetsch at 12 yds. per min. The fabric is cured and dried at 300 to 312° F. in

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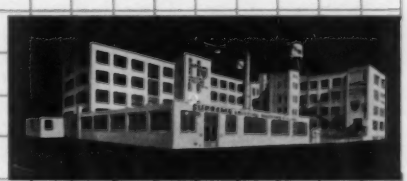
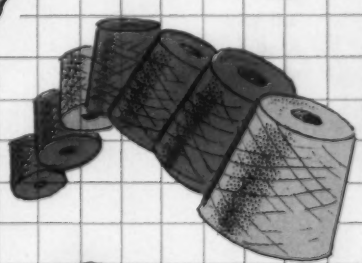
GIVE FABRICS NEW *SALES-POWER* with Supreme NOVELTY YARNS

Novelty yarns can send the sales appeal of fabrics rocketing upward. They give cloth a sales-exciting character... a new look and feel that launches new sales.

Look to Supreme for the latest in novelty yarns of all types including nub yarns for fine gauge as well as coarse gauge machines, chenilles, bouclés, splash, etc., made of natural, synthetic or blended fibres. Supplied natural or dyed to your specifications.

OUR TECHNICAL CONSULTATION SERVICE makes available to you a unique fund of knitting knowledge and experience to help plan your novelty fabrics. Our personnel can recommend the proper novelty yarns for your sales field. These yarns can be tailored specifically to knit efficiently on your equipment.





Supreme NOVELTY YARN CO., INC.
Subsidiary of THE SUPREME KNITTING MACHINE CO., INC.
94-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative & Showroom:
The Malluck Co., 914 East 4th Street Charlotte, N. C.

SK-108

FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN.

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Sells sets
instead of singles...

Unit of sale steps up when
you pack related items together...
in a single H&D corrugated box
that fairly asks to be carried home.
Better see H&D.

HINDE & DAUCH
Subsidiary of West Virginia Pulp and Paper Company
AUTHORITY ON PACKAGING • SANDUSKY, OHIO
14 FACTORIES • 42 SALES OFFICES

a Tube-Tex range and calendered on Tube-Tex equipment. Z-set and Permel-Plus finishes are applied.

Wash Tests Are Made

Wash tests are given to all lots that pass through this department. A 20-in. piece of fabric is cut from the finished roll and washed in a household washing machine. After a 50-min. washing cycle, the fabric is hung to dry and measured for shrinkage coursewise and walewise.

Each new style is checked and put through the wash test to determine the width to be calendered. The yield on production lots is regularly spot-checked.

Dry-finishing operations such as shearing, brushing, napping, and tentering are done above the knitting room. Fleece fabrics are processed first on Gessner nappers. Fabric for sweat shirts is run over 45°-angle bars and napped on both sides with one run through the machine.

A large fan driven from a 1-hp. motor is placed between two napping machines to draw the lint away from the nappers. The lint is drawn through exhaust ducts built under the napper cylinders and captured in burlap bags placed near the fans.

How Fleeces Are Processed

Some fabrics are slit for dry processing. These fabrics are drawn over a frame and slit with scissors down a mark made by leaving out one needle in the knitting-machine cylinder.

Fleece fabrics are sheared after brushing. Some fabrics receive up to five shearing operations according to the end requirements of the fabric.

All fleece fabrics are then inspected on a lighted frame for faults. Each fault is marked with a contrasting colored thread.

Tentering is the final operation for fleece fabrics. This operation is done on a pin tenter frame, and the fabric is heat-set under infrared rays.

Fabrics are rolled and wrapped in brown paper ready for shipping. Finished fabrics are shipped to New York every morning.

SARAN AND PAPER FABRICS

CONTINUED FROM PAGE 115

tenance schedules. In addition to constant inspection of the cloth as it is woven, each roll is immediately inspected on a frame when it is doffed. It is inspected again and graded after finishing.

The cloth is doffed in rolls of 150

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Tuffer TRADE MARK *Card Clothing*

For those who know what they want

. . . and want only the very best!

Manufacturers of Card Clothing since 1866

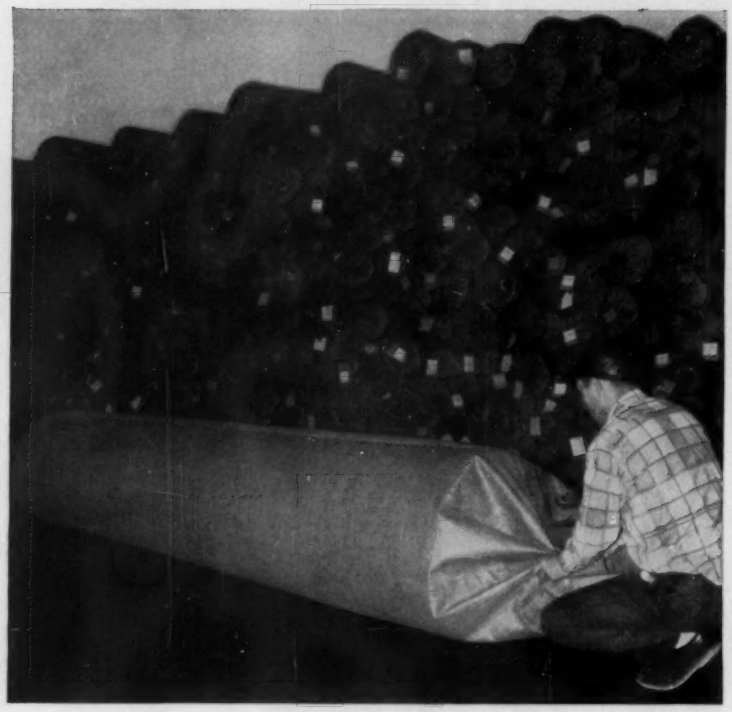
Tuffer **HOWARD BROS.** T2

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., and Gastonia, N. C.

Direct Representation in Canada

TUFFER PRODUCTS — Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing and Brushes • Top Flats re-covered and extra sets loaned at all Plants • Lickerins rewired at Southern Plants • Hand Stripping Cards



Bemis Covers are fast and easy to use. A latex adhesive is brushed through the pores of the uncoated burlap overlap, forming an especially strong seal. Then the ends of the cover are wire-tied. That's all there is to it.

Bemis Laminated Shipping Covers will save you labor—time—money and protect your carpets and rugs

Sturdy Bemis Laminated Covers for shipping carpets and rugs are quick and easy to apply . . . so you save labor, time *and* money. The laminated material (burlap and paper laminated with asphalt) comes in sheets or rolls, so you save valuable storage space. The puncture- and moisture-resistant material gives special protection to your carpets and rugs. And the covers fit so snugly that the roll can't telescope and damage the tuft and pile.

Ask for *details* of the benefits you get from Bemis covers.

Bemis Products for the Carpet and Textile Industry

Laminated Sheets • Laminated Yardage • Laminated Tubing
Tite-Fit Tubing • Paper Rug Covers • Burlap Piece Goods
Wire Ties and Tying Equipment

Bemis General Offices—St. Louis 2, Mo.

BEMIS BRO BAG CO.

and 225 yds. and is shipped to the customer in rolls of 50 to 100 yds. It is 44 to 72 ins. wide; the most common width is 63 ins.

Loom Maintenance Is Important

The looms are kept in good condition by a system of planned maintenance. Each loomfixer gives two looms on his section a complete check-up each week. With all the loomfixers on the three shifts following this procedure, every loom in the mill gets a maintenance check once a month.

A rotating system of assigning looms is followed so that a loomfixer does not have the same looms for maintenance each month.

A checklist is used for loom inspection. When a loom has been checked and all needed repairs and adjustments made, the card is given to the head loomfixer for a follow-up inspection.

Saran and other man-made fibers are bought in yarn form on cones. Paper is purchased in rolls and is split in 1-in.-wide strips and twisted into yarn. Winding, twisting, baling, and beaming are done at the mill.

Paraffin boards mounted between the whiproll and the warp stop motion impart wax to the paper yarns during weaving.

After weaving, some of the fabrics are shipped as they come from the loom. Others are finished. Finishing is confined to calendering, coating, and waterproofing.

WOVEN LABELS

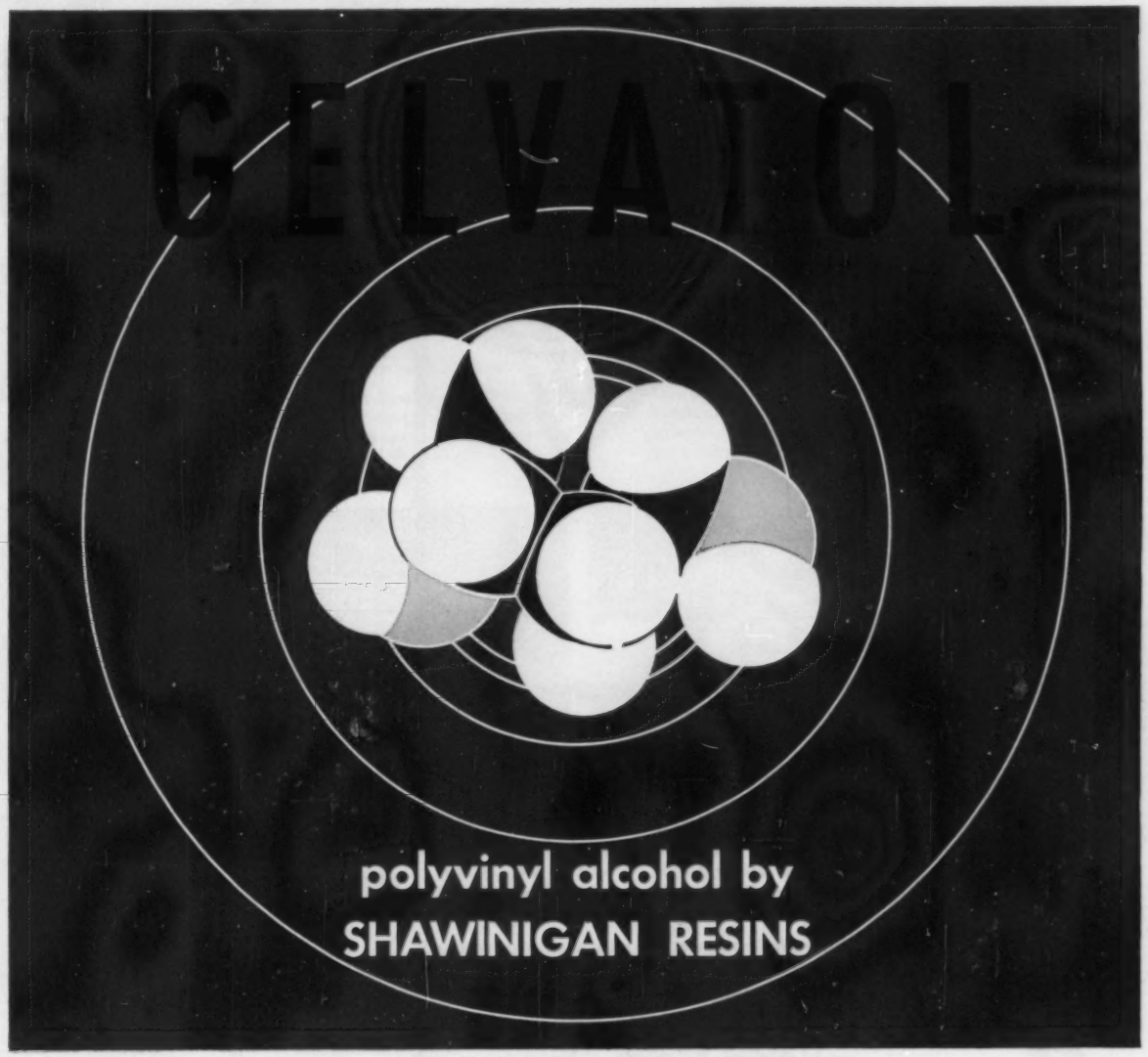
CONTINUED FROM PAGE 141

much as $\frac{1}{8}$ in. through shrinkage. As a result, the setting of the warp-yarn-shed clearance over the shuttle is enough to cause fabric damage. Then the harnesses have to be adjusted.

Humidity also affects the warp yarn. Too much humidity (over 60%) gives the yarn too much elasticity. The correct amount of humidity (50 to 55%) adds to the tensile strength of the yarn.

The entire plant and machines at Premier are extremely clean. The hard-maple floors are finished with a gymnasium-type finish. Every four years they are washed and refinished. The only maintenance between refinishing is daily sweeping by the janitor. The building interior is painted white.

Looms are cleaned thoroughly at warp-outs, and weavers give their looms superficial cleaning and dusting each week. They also oil their looms each week and use only one oil, a special loom oil selected by Mr. Dyer.



now on stream!

Commercially proved GELVATOL is now available from our new multi-million pound capacity plant. Advanced technology and production techniques enable Shawinigan to produce an extremely flexible series of resins of unmatched quality and uniformity.

GELVATOL opens your way to bigger profit-making markets. Standard grades are available, of course . . . and Shawinigan also offers unique, extremely low viscosity grades. Twelve grades in all are at your disposal for efficient, profitable formulations which will satisfy virtually any end-use requirement.

GELVATOL is the *big* name in polyvinyl alcohol resins. Write today for full technical information, product sample and sales service, to Shawinigan Resins Corporation, Department 4311 Springfield 1, Mass.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES
NEW YORK SAN FRANCISCO

GELVATOL®— *polyvinyl alcohol by*

SHAWINIGAN RESINS®

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SMOOTH RUNNING . . .

Like to hurdle high production costs . . . set new records for trouble-free spinning and twisting? Smooth-running National-Sterling Ring Travelers can put you on the right track!

Carefully made to meet the most exacting standards, National Travelers assure the ultimate in precision balance and uniformity of weight, dimensions, temper and finish. Their flawless performance consistently produces more pounds of first class yarn . . . at higher spindle speeds . . . with fewer ends down.

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POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 153

Let's take a hypothetical case and see how you, as a supervisor, can be helpful. Assume the issue to be arbitrated is whether or not an employee has been discharged for proper cause. You are the supervisor who made the decision to discharge; and you did so because the employee had a bad attendance record and failed to improve it, even though cautioned that he must. The strategy for the arbitration hearing is to pinpoint the bad attendance record and the fact that the employee had been warned prior to his discharge.

Here are some of the questions you will be expected to answer in presenting your testimony: How often was the employee absent? When did his poor attendance begin? What reasons did he give for his absences? Was there any pattern in his absenteeism? For example, did he frequently lay out on Mondays or the day after payday?

How did his record compare with others in the department? When did you first talk to him about his poor attendance? How many times did you reprimand him? When did you warn him that failure to improve would result in discharge? What did you do about others in the department with poor attendance records? Have you discharged others under similar circumstances?

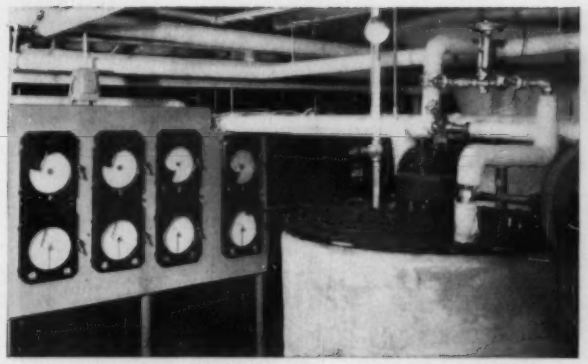
If you can present factual answers to questions of this nature, your testimony will be of great value in supporting the company's position. On the other hand, if you don't have the answers and have difficulty recalling what transpired and when, your testimony will contribute less.

It is a sad fact but true that arbitrations are often held months after the events that led to the grievance at issue. Thus some notes as to what took place when, what was said, etc., will be helpful to you in recalling past events and in testifying about them in convincing fashion.

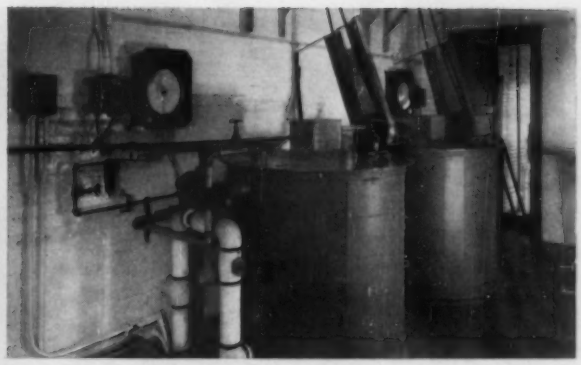
4. Know Your Weak Points

It is sound business not only to know and emphasize your strong points but to find what weaknesses there may be in the company's position. If these weaknesses are developed only in the course of the arbitration, it may be too late to work up an adequate defense or find an effective rebuttal.

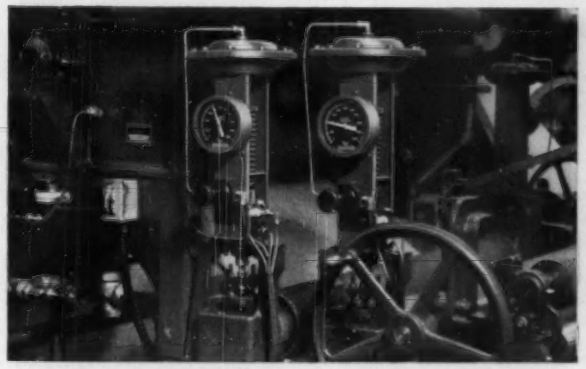
In preparing for the arbitration, it will be helpful if you bring out all the facts that might affect the outcome



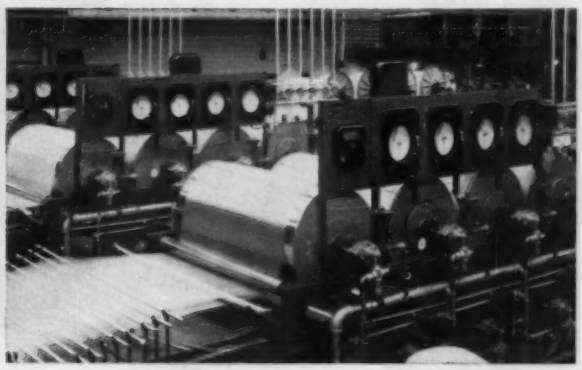
Size Cooking Temperature Control System automatically regulates cooking temperature and time period according to pre-determined schedule. Assures same cooking schedule for every batch; gives uniformly sized yarn.



Storage Kettle Control System maintains ideal holding temperatures, resulting in uniform viscosity of size. Compensates for temperature loss in circulating system. Gives you a permanent record of storage kettle temperatures.



Size Box Squeeze Roll Control System measures and controls actual pounds of force applied directly to the roll—unaffected by friction or leaking air. Prevents soft spots and gives uniform penetration of size.



Automatic Cylinder Control System for High Speed Slashing controls moisture content of yarn by regulating surface drying temperature of slasher cylinders. Most accurate system yet devised. Increases weave room efficiency.

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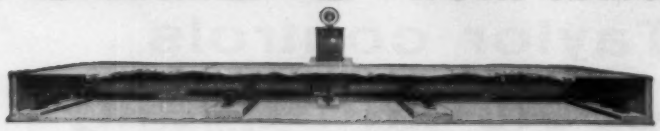

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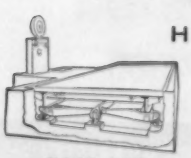

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of the case, even if it appears that some of the facts might be damaging. With advance knowledge, the team working up the arbitration strategy can anticipate the direction of the union's attack and can determine what approach can be used to combat it.

It is not safe to assume that weak points in your position will not come to light in the arbitration. Arbitrators are generally pretty alert and have a facility for spotting inconsistencies and gaps in the testimony. The prudent course is to examine your case in all its aspects beforehand and to make plans that take potential weaknesses into account.

5. Have a Mock Arbitration

Many companies have found it helpful to conduct a mock arbitration before the scheduled hearing. This dry run is for supervisors and others who will be witnesses. They can testify as if they were in the actual arbitration and can be tested under cross-examination. This practice session has the double advantage of letting the supervisors acquire a feel of the upcoming hearing and of correcting mistakes or gaps in their testimony.

In the absence of a mock arbitration, supervisors and other witnesses should at least have the opportunity to be questioned on the facts they will be presenting in the hearing; and they should further be questioned as they later will be in cross-examination. As a supervisor, you will find that this experience, while possibly not pleasant, will enable you to do a better job when the chips are down at the hearing before the arbitrator.

CHATHAM BLANKETS

CONTINUED FROM PAGE 129

inspection and then are cut into blanket lengths. Each blanket is bound on the cut edges with a nylon fabric dyed to match the blanket.

The blankets are then folded and are ready for packing.

Chatham uses polyethylene bags for packing individual blankets and also makes extensive use of cardboard boxes. These boxes are die-cut and shipped to Chatham flat. The packer has a jig built into her working area that starts the shaping of the flat sheets into boxes.

Once the initial shaping has been started in the jig, it is a matter of seconds for the operator to fold and lock in the box sides, insert a stiffener, and put in the blanket.

Box tops are also made up from

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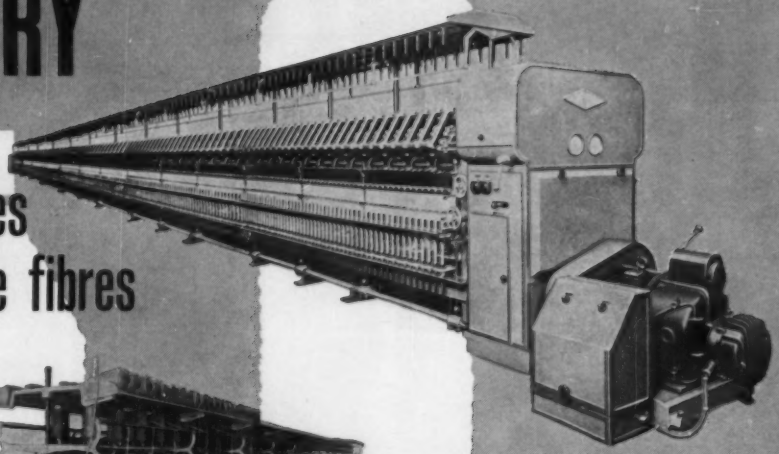
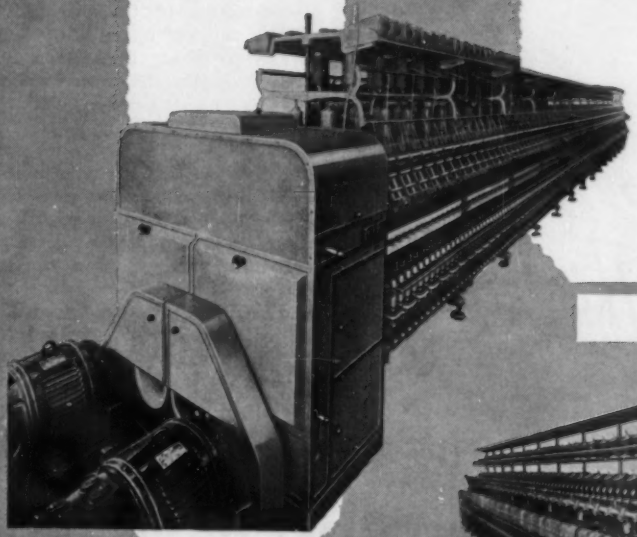


Cotton ring
spinning frame

Ringtwisting frame
for carded wool



Wool ring spinning frame

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die-cut cardboard sheets and are made up in a separate operation.

Chatham's success with the Purrey line of rayon-Orlon blankets is partly a result of good merchandising backed by a product that has been given all the care in manufacturing that is usually reserved for much more expensive fabrics.

HIGH-GRADE WOOLENS

CONTINUED FROM PAGE 127

The next step is to roll the brushed goods onto a perforated stainless-steel cylinder and immerse them in a tank of boiling water. The goods rotate in the tank, and boiling water is pumped through the perforated cylinder. The time cycle for this process is from 7 to 30 mins., depending on the goods.

The boiling water permanently sets the direction of the pile produced by the napping operation.

The goods are then taken to the dyebecks unless they have been made of stock- or yarn-dyed material.

Acid Dyes Predominate

Fast acid colors are used in Northfield's lines for the most part. Clarity of shade, good working qualities, and adequate lightfastness are factors that determine the acid dyes chosen for this sort of work.

The dyebath is made up with 1% owg. of a penetrant, the color is added, and the temperature is brought to the boil in 30 to 40 mins. Exhaustion of the bath is aided by adding 2 to 4% sulfuric acid owg. as the dyeing progresses.

When the shade is reached, the bath is cooled to 180° F. and run until no further change in shade can be seen. Then the bath is flooded and cooled down gradually.

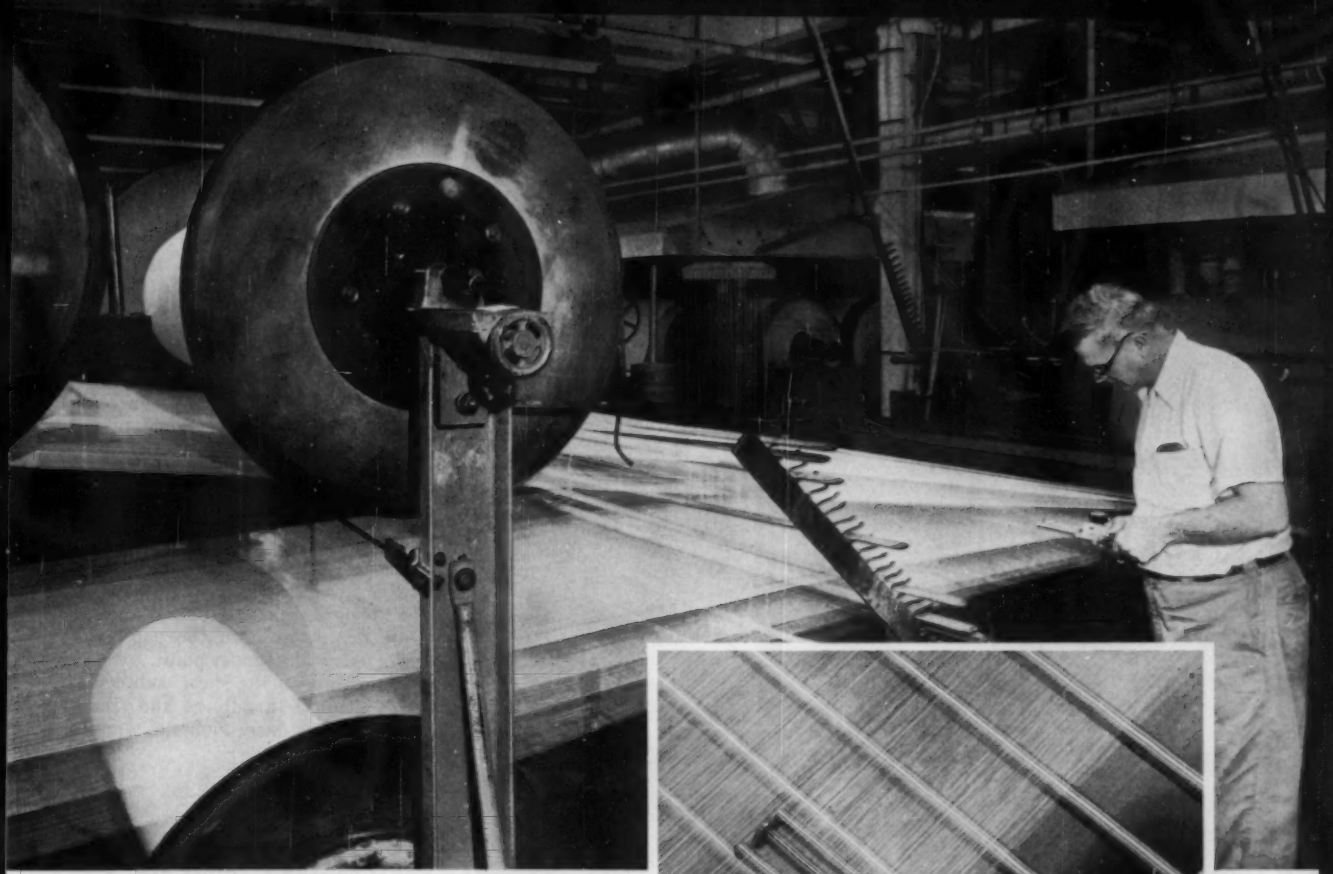
Mothproofing Is Featured

Because Northfield's lines go into better-class garments, customers are offered protection from moth damage in 50 to 70% of all goods handled; and of course the process is also applied when it is specified by a customer.

Northfield uses Mitin, made by Geigy, to keep moths out and applies the product directly in the dyebath or as an aftertreatment for stock- or yarn-dyed fabrics.

Mitin may be added to the dyebath along with the color at the rate of 2 to 2½% owg. The product combines with the wool and provides permanent protection against moth damage.

As an aftertreatment, 2 to 2½% of Mitin and 2% formic acid are added



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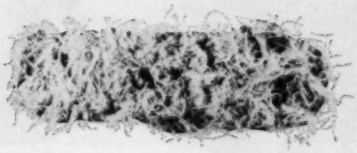

CUT THREAD WASTE LIKE THIS.

TAYLOR-STILES
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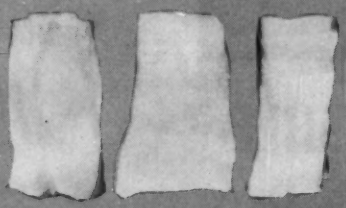

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to a water bath and the goods are processed for 30 mins. at 160 to 170° F.; then they are rinsed and taken out to be extracted and dried.

The final steps in producing a face-finished fabric consist of drying, shearing, and inspecting. The shearing operation complements napping and often requires many runs to get the exact surface required. Several very light cuts are preferred to a single run with knives set to cut faster.

The soft, plushlike surfaces of cashmere blends are developed somewhat differently from the directional piles produced on zibelines.

Fulling and scouring are carried out to suit the fabric; then the goods are napped wet to produce the basic nap. Usually six to eight runs are given on the napper; then the goods are dyed and dried.

The napping operation is continued on the dry goods until the nap has been raised to the proper point.

Several runs on the shear complete the mechanical handling, and the goods go to final inspection and wrapping.

GOOD SUPERVISOR

CONTINUED FROM PAGE 99

10. Character. The supervisor should have a good moral character; not necessarily religious, but he should be guided by Christian principles. He should have enough strength of character to stand up for what he believes to be right and to condemn what is wrong.

11. Liking for the work. No one can be happy or successful on a job he doesn't like. If a supervisor doesn't like his job, his dissatisfaction becomes contagious. His dislike of the work will affect his own performance and will also adversely affect the entire department.

A successful supervisor must like his work and must also try to make it more interesting and challenging to others. A person's attitude when he tackles a job has much to do with whether it is a chore or a pleasure.

12. Progressive. To be successful, a supervisor must be progressive. He must keep up with new developments and be willing to try new methods. An open mind is a valuable asset when anything new is being evaluated.

A supervisor can't let himself get into a rut in any phase of his job. He must be progressive in his thinking as well as in his actions.

13. Criticize constructively. Any-

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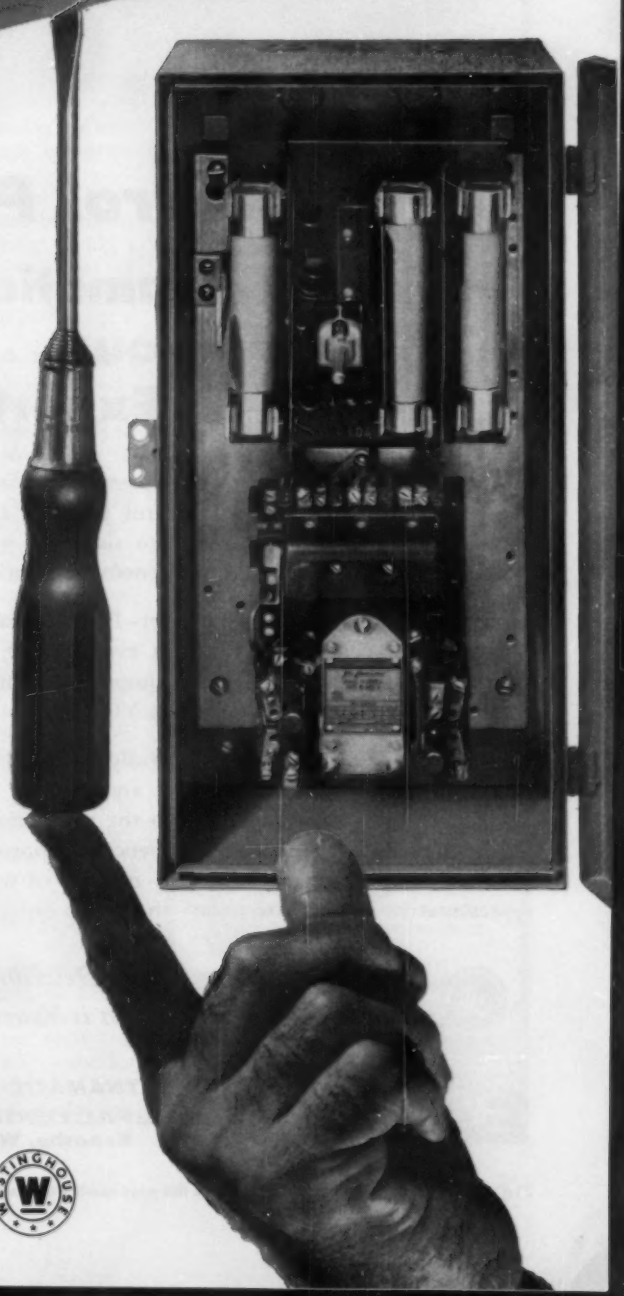

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body can find fault. When a supervisor has to criticize, he should do it with tact. And coupled with his criticism should be suggestions for improvement. Harsh or uncalled-for criticism will destroy cooperation and build resentment.

14. **Sense of humor.** A good sense of humor will help the supervisor over many rough places. He shouldn't go around laughing and telling jokes all the time, but he should be able to see the bright side of life and not take himself too seriously.

A person who can laugh at himself and his mistakes just as heartily as he laughs at others can't help making friends. And a supervisor needs all the friends he can get.

15. **A good listener.** The supervisor must listen to many complaints, requests, and criticisms daily. The constant bickering gets very tiresome. But the best supervisors are good listeners. Being able to tell his woes to the boss will often work wonders with an employee even though no action is taken.

But listening is often not enough. The supervisor should also be able to evaluate anything he hears. Being a good listener enables him to get all the facts and thus be in a better position to take appropriate action.

16. **Adaptable.** The supervisor needs to be adaptable to changing conditions. His thoughts, actions, and methods should be flexible enough to take changes or even emergencies in stride.

He should be able to adapt himself to new policies, rules, and regulations, as well as to changed physical features of the job. But he should also be capable of planning adaptations himself and of making improvements.

17. **Neatness.** The last quality mentioned is neatness. A supervisor should be neat in appearance and behavior. He does not need to be a flashy or even a stylish dresser—just neat and clean.

It a supervisor is neat, he will try to keep his department the same way. A clean and neat work place is conducive to quality work and high efficiency; so a supervisor's ability is often judged by his personal appearance.

There are probably many other desirable qualities that could be listed, but these employees have given the ones that they think are most important. A supervisor who possesses all the qualities listed here, even in a small degree, can consider himself above the average.

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STANSO TEX OIL general purpose dyeing, penetrating assistant. Gives rapid wetting, good dye leveler. Used to prepare dye paste, or added to dye bath, or as softener in final bath.

STANSO SAVON all-purpose scouring solvent soap. Removes oil, graphite stains from elastic cloth, graphite stains from cotton laces, spots made by solvent dyeing assistants from dacron fabrics.

STANSOCLEN low titer scouring and fulling compound. Has built-in water softeners, provides rapid wetting, good lubricant, emulsifies oils, greases, removes dirt. Good rinsability.

STANSO PAINT & TAR REMOVER for scouring wools and worsteds. Emulsifies paint, tar spots; removes oil, grease stains. Rinses easily in finishing operation.

STANSOLENE wetting, dye-leveling agent for all materials. Used when dyeing cotton and mercerized warps. Gives even dyeing on both packaged goods and thread cones. When used in the rinse bath, eliminates "smudging" on dyed goods.

STANSO BLEACHADE wetting agent, penetrant, scouring assistant. For natural and synthetic fibers. Widely used in kier boiling, continuous bleaching operations. For scouring light shades before dyeing. Good dye leveler.

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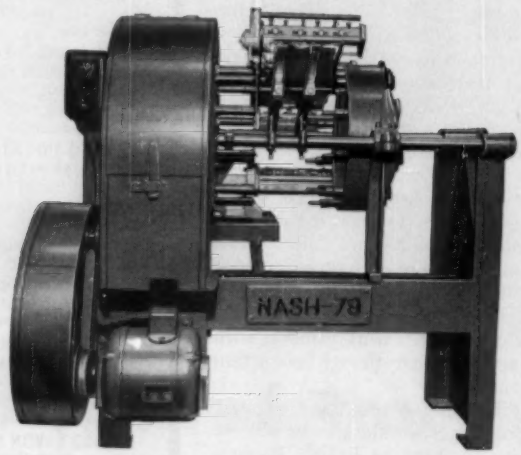

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SPIN SLUB YARN

CONTINUED FROM PAGE 147

Diameter of the slab is determined by the length of time that the pins in slubbing chain *A* are in contact with double sprocket *B*. To make a fat slub, the pins must stay in contact with the sprocket longer than for a thin slub. The length of contact is determined by experience.

Sprockets Are Attached to Rolls

The foot-end slubbing attachment is similar in principle to that of the head-end attachment in that an overrunning crown clutch gear is used. The foot end of the front roll has a tight sprocket, and the foot end of the back roll carries a tight double sprocket with a loose single sprocket between the tight sprockets. The sprocket on the front rolls and the loose sprocket on the back rolls are aligned to form a train. The chain runs over both sprockets without jumping off or binding.

The speeding up of the back roll takes place when the slubbing pin in the chain makes contact with the double tight sprockets on the back roll. This action causes extra roving to be fed into the drafting rolls, and a slub is formed in the yarn.

Foot-end slubbing equipment is easier to make in the mill shop than head-end equipment, but it is more susceptible to mechanical breakdowns. Square-neck rolls are necessary, and roll joints must be tight. More strain is put on the front and back rolls; and unless the equipment is kept in good condition, there is a tendency for the rolls to backlash.

Pointers on Running Attachments

Here are some pointers that will help you spin better slub yarn:

After the frame is started up on slub yarn, it should be inspected frequently. Close attention is necessary to make sure that all parts are working properly at all times.

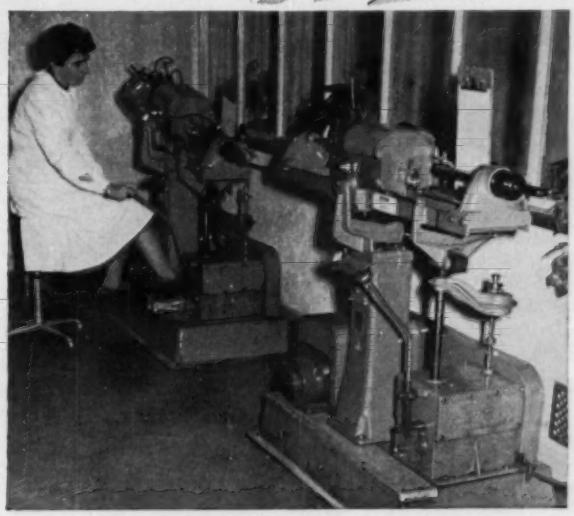
Operators should be trained to select travelers carefully. The yarn diameter is changing at intervals as the slubs are made, and more time is needed to determine the correct traveler than for regular spun yarns. The slub in the yarn usually requires a larger circle than regular yarn. Also, the length of the slub has to be considered when the traveler weight is determined. The wrong traveler will cause excessive ends down, a ragged appearance of the slubs, whipped yarn, and other defects.

In making slub yarns, it may be necessary to change the lay of the yarn on the bobbins or change the

← For more data, write this page number on Reader-Service card.

– and in

Switzerland



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At Emmenbrucke, Switzerland, these Incline-plane Scott Testers* are used in the laboratory of the Societe de la Viscose Suisse for the evaluation of tyre cords. These IP-4 serigraphs perform tensile and hysteresis tests from 0 to 50 lbs., or 0 to 20 kilograms. Their "picturized" result charts are readily understood regardless of language, and they test in conformance with international standards, and give a universal testing language understood and accepted everywhere. The world status of Scott equipment is attested by the fact that today

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stroke of the machine to obtain the best results in winding. These changes are especially important if the yarn is spun on a warp bobbin or if it is spun on quills for weaving.

It is best to use a single roving in the creel where practical to prevent singling.

Extra Twist Prevents Break-Backs

Roving break-backs in the creel can be prevented by adding a little extra twist. Caution should be exercised, however, since an excessive amount of twist may cause improper drafting during the slubbing action. It is usually necessary to do some experimental work before arriving at the correct twist.

When the slubbing action is taking place, the roving usually is pulled in fast and is given a slight jerk. If the skewer points are too sharp, the roving bobbin will continue to turn and unwind the roving. The slack roving tends to tangle and break between the creel and the back roll. This condition can be stopped by blunting the points of the roving skewers enough to keep the bobbin from turning too freely.

CUT COSTS

CONTINUED FROM PAGE 130

fore dyeing to get a good bottom on the heavy cotton yarns that make up the filling. Bleaching pays off in helping to get full deep shades with less color.

Sulfur colors are used extensively at this plant for the blacks, browns, grays, navies, and other dark shades that predominate in the shoe-faille market.

The dyed goods are vacuum extracted at the cans and dried and finished in one run.

Mechanical handling is completed on the tenter frame, where the goods are steamed to width and residual moisture is dried out by gas-fired heating units.

ROUND TABLE

CONTINUED FROM PAGE 10

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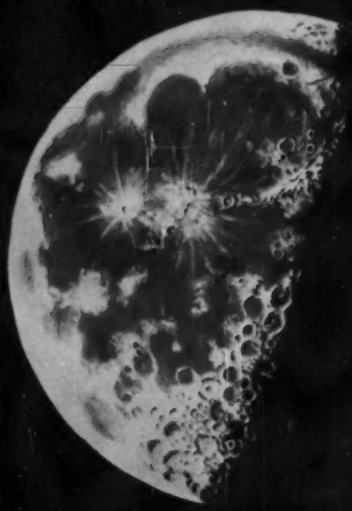

What colors will look good on the moon?

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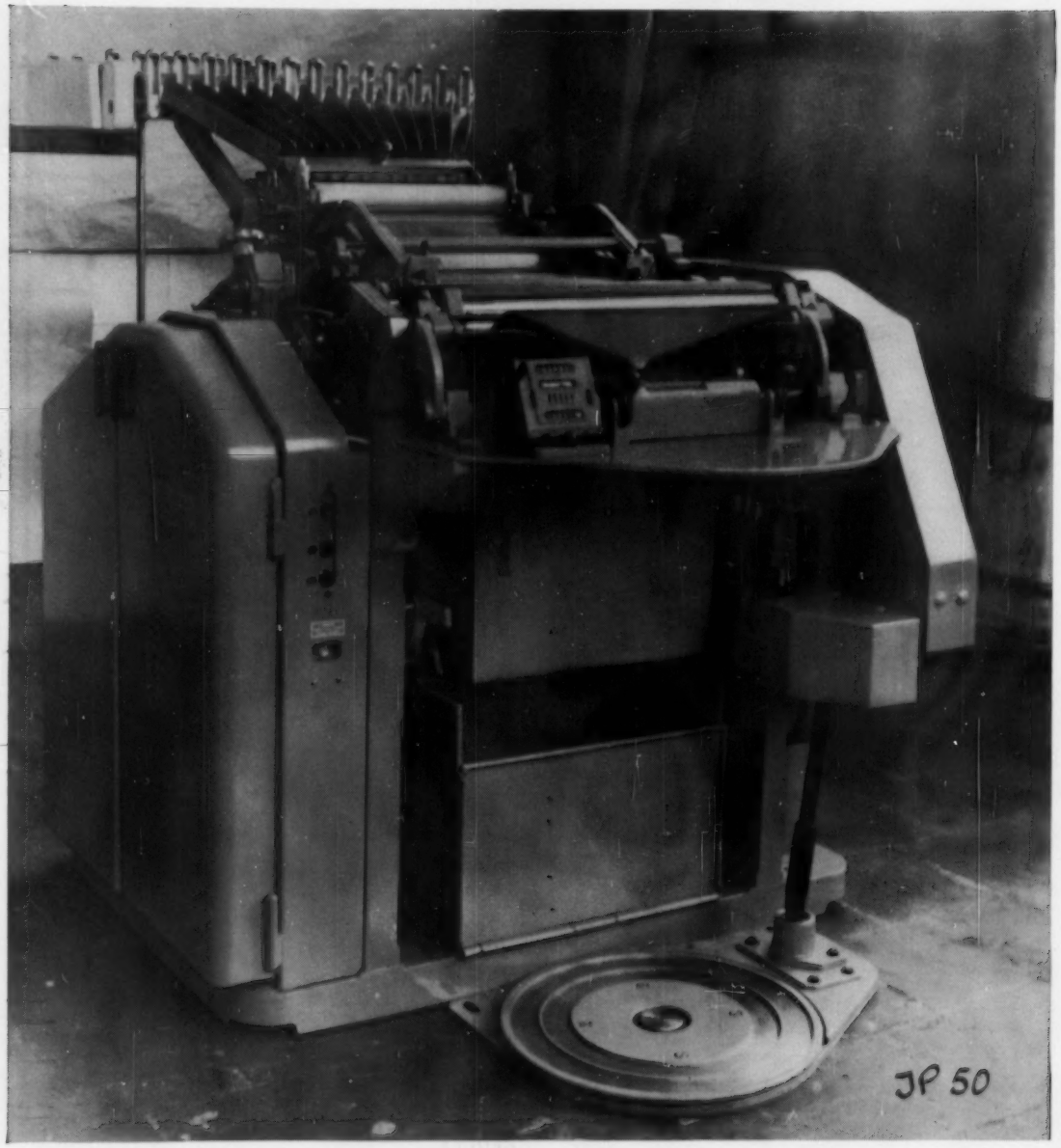

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CONTINUED FROM PAGE 220

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Dear Editor:

In Equipment & Supply News, page 128, of your August issue, an item described a yardage counter made by us and especially designed for measuring carpet. The item stated that the counter is operated by electrical impulses.

We do manufacture a carpet measurer, but the instrument fitted is a mechanical revolution counter and is not operated by electrical impulses.

B. & F. Carter & Co. Ltd.
Bolton, England

FILLING TENSION

CONTINUED FROM PAGE 123

There are many types of opossum fur and not all are suitable for shuttles. Also, each individual skin has varied length and thickness of pile. The hair is 1 to 2½ ins. in length but is usually sheared to a ⅞-in. length for shuttle fur. Some mills specify ½- to ⅝-in. pile. All the guard hairs are clipped.

Fur is used in the shuttles in strips of ¼ to 1 in. in width. The fur is usually purchased by the mill in continuous strips sewed together lengthwise. One opossum skin will make a 10-ft. strip of average-width shuttle fur. Mills in this country spend over $1-million a year for opossum fur.

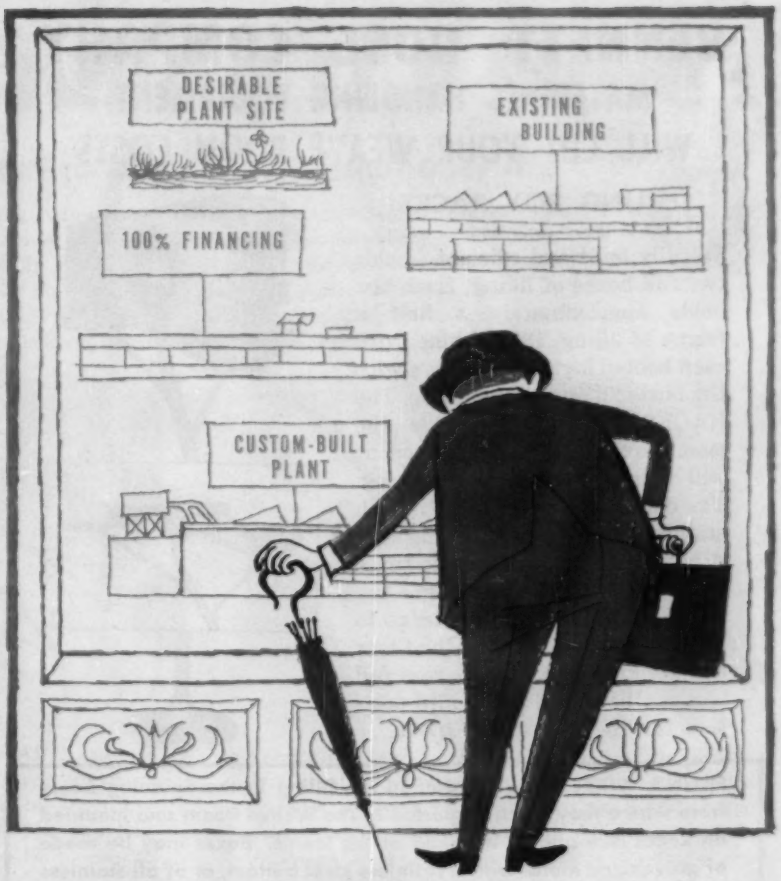
Each Hair Is a Spring

Opossum fur retains its life and resiliency for long periods of use and is not affected by humidity and atmospheric conditions. But its greatest characteristic is in the formation of the hair, which is different from that of most other animals. Each hair has a curly, corkscrew shape that makes it a miniature spring. This springiness of the fur is what makes it such a good tensioning material.

Fur is attached to the inside wall of the shuttle with glue. Usually, a groove is cut in the wall the depth of the hide or fur backing. Some of the fur has an adhesive backing so that it can be applied directly to the shuttle without the use of glue. However, most of the glue that is used will dry sufficiently in a few minutes for the shuttle to be put back into use.

Before the Australasian opposum was discovered by the weaving mills, furs such as muskrat, rabbit, and squirrel were used. About 5% of the total shuttle fur used today is muskrat.

CONTINUED ON PAGE 224



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Cabin Hill, Greensburg, Pa.

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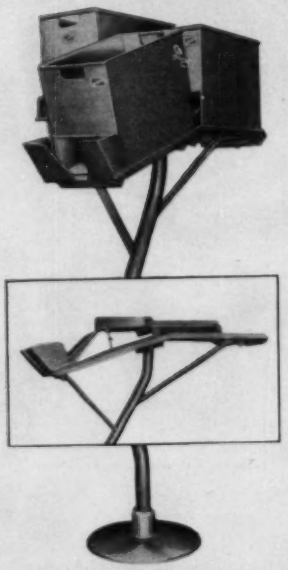
BENNETT ROSE COMPANY

MATERIALS HANDLING EQUIPMENT WILL CUT YOUR WEAVE ROOM COSTS

FILLING BOX RACKS

(patent applied for)

Sturdily built and efficient—holds two full boxes of filling. Each box holds approximately a half a frame of filling, 130 bobbins, with each bobbin laying crossways with the butts all on the same side. The RACKS are placed beside the looms so that the dispensing spout will be just over the battery filling. The dispensing spout is lined with stainless steel as is the filling box. A battery filler can fill up to twice as many batteries than from a tub or basket. There is a side ledge to hold an empty box after the front box is emptied so that the rear full box can be pulled down into position for the dispensing spout.



FILLING BOXES: Used for doffing the filling in the Spinning Room from where they are transported to the Weave Room and mounted on Racks (see above) installed at the looms. Boxes may be made of galvanized metal with a stainless steel bottom, or of all stainless steel with perforations for the steaming process also. They can be furnished in various sizes.

(Available with or without dispensing feed-lip.)

FILLING BOX TRANSPORT

This Filling Box Transport is of all steel construction—is used to handle the Filling Boxes from the Spinning Room to the Weave Room — with four shelves holding 20 boxes. May be equipped with any casters. (By using this BENNETT ROSE Battery Filling System a mill can save from 30 to 50% on its battery filling costs and pay for this equipment in from 12 to 20 months.)

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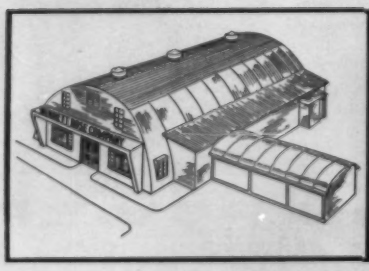

BENNETT ROSE COMPANY

P. O. BOX 8

ROEBUCK, S. C.

This fur is very soft and is suitable for silk and some man-made-fiber weaving.

Sheep wool also accounts for about 5% of the shuttle-fur market. Wool is used mostly in the weaving of coarse cotton yarns where heavy tension is needed. Some raccoon and beaver fur has been tried in shuttles, but their use is limited.

Synthetic-fur and pile fabrics have also had some use in shuttles. Folded plush cloth pads are sometimes used instead of fur.

But the Australasian opossum remains the leader in the shuttle-fur field. Opossum fur is plentiful, fairly cheap when compared to other furs, and possesses qualities that no other fur has.

Nylon Loops

Loops made of Du Pont's Tynex nylon monofilament have become popular as a tensioning material. At first, the mills bought the nylon as it was put up for retail sale, to fishermen as a leader material. It is now available commercially in wholesale quantities made expressly for mill use.

Three sizes of the nylon for shuttle loops have become more or less standard. There are 0.021-in. dia. (about 19-lb. test); 0.028-in. dia. (about 32-lb. test); and 0.036-in. dia. (about 51-lb. test).

The nylon loops are placed in the shuttle walls much the same as bristles, but the two ends are attached to the shuttles, leaving a projecting loop. These loops may be placed in contact with the filling horizontally, vertically, or at an angle. From 1 to 10 loops may be used in each shuttle.

Many claims made for the loops by mills first using them have not proved out. In fact, some of the mills that adopted the loops for all of their looms have since discarded them. The one thing that caused many mills to go overboard about the loops is their cheapness compared to fur.

Many mills learned anew the lesson that first costs can be deceiving. The labor cost, increased seconds, and loss of production many times exceeded the savings realized through the substitution of nylon loops as a tensioning material. However, much of the trouble was due to inexperience and not enough testing to get the correct application of the right size monofilament.

The nylon loops have a definite place in the shuttle-tensioning picture, and it will take only time and experience to relegate them to their proper place. It is estimated that the loops now account for about 10% of all shuttle-tensioning materials in use.

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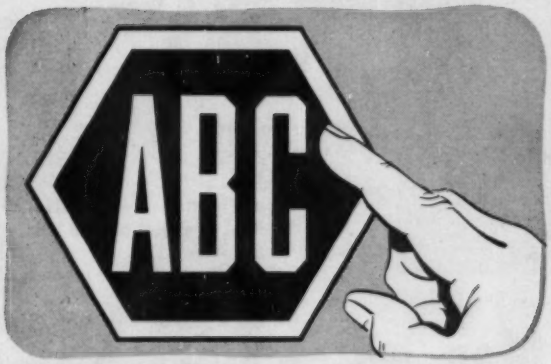
The Audit Bureau of Circulations (ABC) is a cooperative organization that sets standards of good business conduct for its publisher members. Twice each year ABC auditors carefully scrutinize the entire circulation structure and operation of every member magazine. In a very real sense, therefore, they are "minding the store" — making sure that no false or misleading claims are made regarding the size or composition of a magazine's audience.



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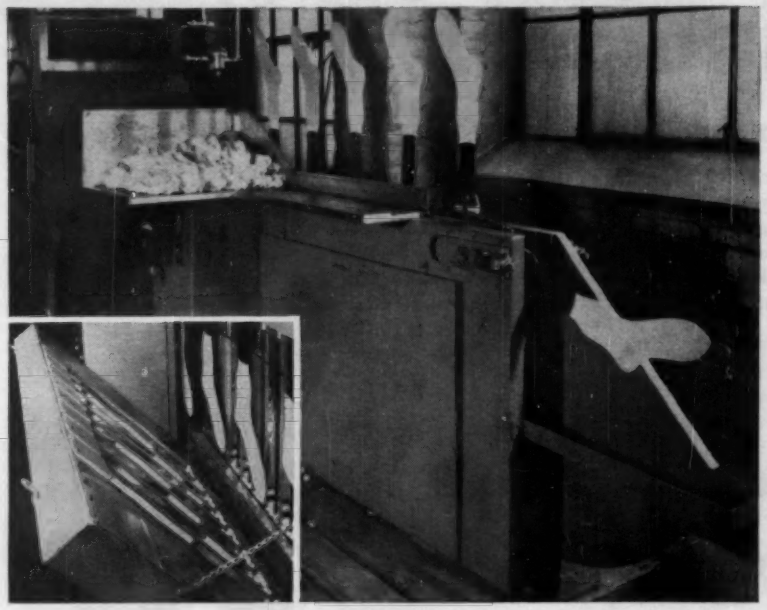

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SPINNING RINGS

CONTINUED FROM PAGE 139

Another factor that shortens ring life is rust. Humidifier water on the acid side causes rust to form rapidly. Rust also can be caused by moisture and temperature changes in the supply room where rings are stored.

Rings should not be ordered ahead and stored for long periods of time. But if they have to be stored, the boxes should be turned over every few months so that the oil will spread around them.

When rings are taken off of frames for storage, they should not be stored dry or wiped with ordinary oil. Antirust oil should be used.

When To Turn Over Rings

Rings should not be turned over haphazardly in the spinning room. They should be turned over only if:

1. Original oil is left on the bottom flange
2. Relative humidity isn't too high
3. New-ring care is given them
4. Rings are not too large, and speeds are not too high
5. Coarser work is run temporarily
6. Rings are repolished and cleaned without using a solvent

TRAIN FIXERS FASTER

CONTINUED FROM PAGE 143

ied, the instructor sends a trainee out of the class room and puts a machine out of time or loosens a part. The trainee is then called in to attempt to rectify the trouble.

At the end of the formal training period, the trainees are sent out to the knitting room. Their first duties consist of doing various repair jobs throughout the knitting room wherever they are required.

After a few weeks on this job, the trainees are given a partial set of machines to maintain. The number of these machines is gradually built up until after a four- or six-month period the trainee is maintaining a full set of machines.

The trainee does not work to a goal or a production chart; but the instructor works to a schedule, and he has a manual that he follows closely. Reg Laurie of Geoffrey Ladhams Associates attended the first formal training period and introduced the instructor to the system.

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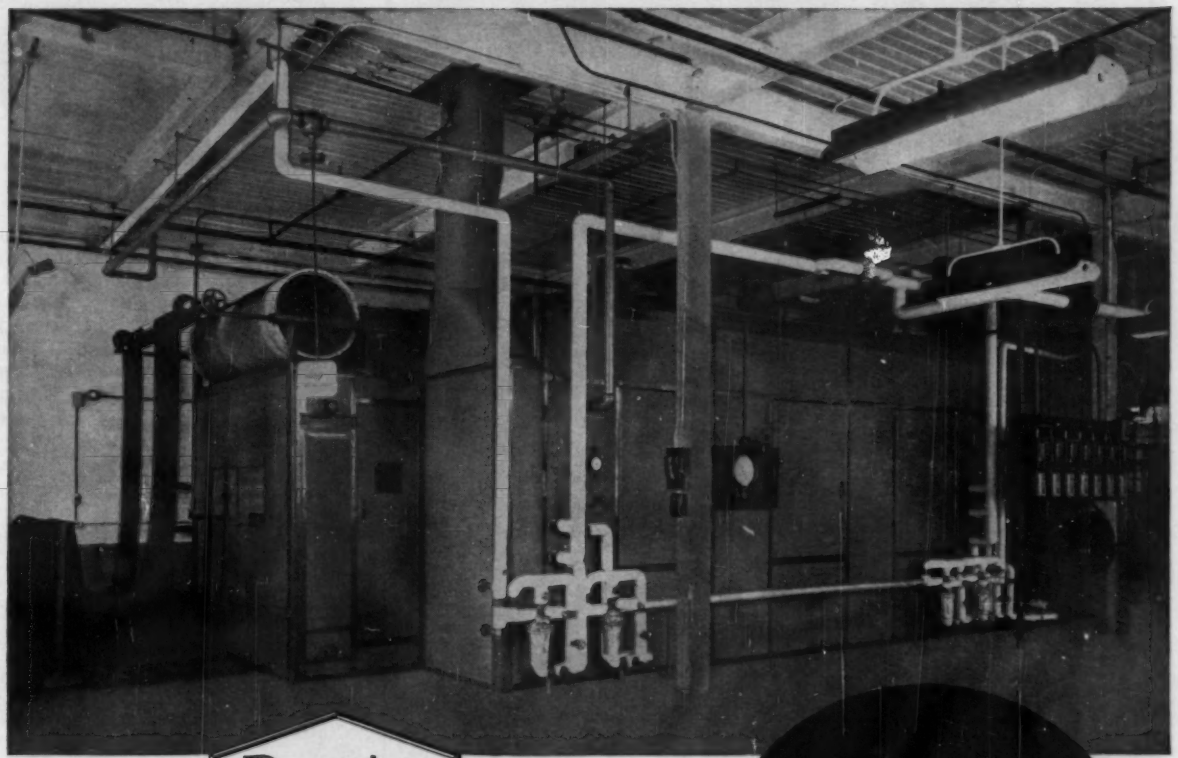

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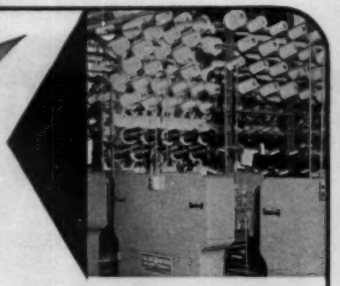

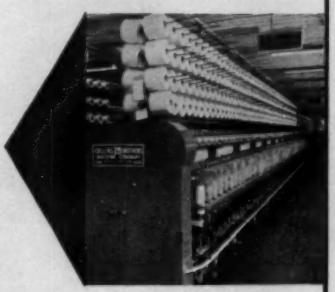

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Since 1866 Collins Twisters have been the finest in the field. Today's line offers you many valuable exclusive features. Let us give you full information on the machines you need.

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647 Roosevelt Ave., Pawtucket, R. I. • Charlotte • Chicago
Hugh Williams & Co., 27 Wellington St. E., Toronto 1, Canada

NO MECHANICAL MAINTENANCE

ROTARY UNION
(Trade Name — Patented)

America's Most Reliable Rotating Joint

It takes about 15 minutes to install the ROTARY UNION. It will give you thousands of hours of leakproof service without mechanical maintenance of any kind, because it is self-adjusting to pressure and self-aligning to strain. Ball bearing construction gives smooth sealing at high speeds with a minimum of power.

Don't spend your weekends repairing or overhauling stuffing boxes, packing joints, or ordinary rotating joints. Install Rotary Unions on your slashers, dry cans, embossers, calenders, etc. and enjoy reliable trouble-free service.

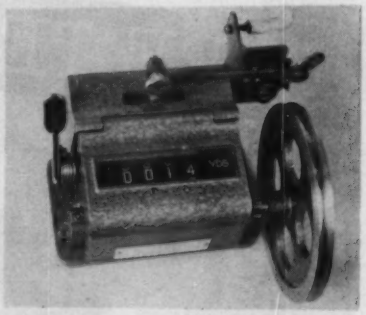
Contact our nearest office or write for Bulletin 700W

"WHERE *Good Connections* COUNT"®

Home Office and Factory:
PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N.C.
Baltimore — Buffalo — Camden, N. J. — Chicago — Cleveland
Los Angeles — New York — Providence — Montreal — Toronto

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 168



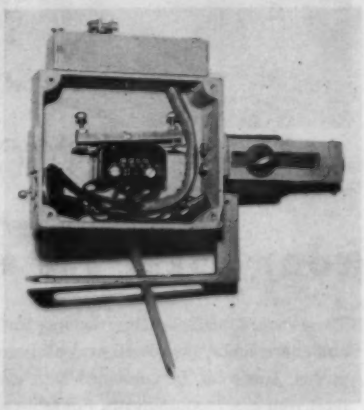
Thread-Measuring Device

A thread-measuring device announced by Trumeter Co., 38 W. 32nd St., New York 1, N. Y., has an automatic cutter and a predetermined counter fitted with a V-groove measuring wheel.

After measuring the predetermined length, the cutting device automatically severs the yarn. The device has easy-setting predetermined wheels and a quick-resetting lever for a repeat run.

The device is used on pirn, cheese, and cone winders to obtain uniform lengths and avoid waste.

Circle T-28 on Reader-Service Card



Guider-Sensing Switch

A guider-sensing switch for tenter frames and dryers processing a large variety of fabrics has been announced by Blake Electric Mfg. Co., P. O. Box 26, Winchester, Mass.

The snap-action switch requires only a small amount of pressure to operate. It is easy to adjust and lock and operates without maintenance.

Circle T-29 on Reader-Service Card

CONTINUED ON PAGE 230

HE'S IN PARADISE because he's found out he can get the right needle for any sewing operation. Whether you require needles for sewing, knitting, felting or tufting, you'll want to celebrate, too, once you see how easily all your requirements are met by **THE TORRINGTON COMPANY.**

Torrington, Conn., U.S.A. Branches in New York, Philadelphia, Boston, Chicago, Greensboro, St. Louis. Pacific Coast Representative: E. G. Paules, Los Angeles

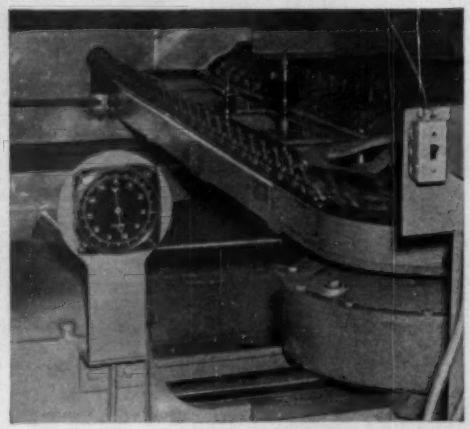
For more data, write this page number on Reader-Service card. →

JONES TACHOMETERS GIVE VISUAL CHECK IN YARDS, FEET PER MINUTE

Tests Show Even Better Quality at Higher, Consistent Machine Speeds

Constant visual readings of exact speeds as provided by Jones Tachometers have proved a boon to many operations in the textile industry.

By a series of careful tests in a number of plants it has been shown that the average operator runs his tenter, palmer or other finishing machine at a speed slower than is efficient for fear that he may damage goods.



Jones Tachometer on Tenter Machine

Labor cost cut by one-third

—It was found, for example, that lightweight cotton cloth, which should have been running at 35 yards per minute, was running only slightly over 23 yards per minute. By using a Jones Tachometer, the same operator maintains a consistent speed of 35 yards per minute.

Self-liquidating investment

—The initial cost of a Jones Tachometer installation is negligible compared to the greater dollar-volume almost immediately realized in terms of reduced labor costs, increased production and improved quality.

Write for your free copy of Catalog 149-4 describing fixed and portable type tachometers.

JONES MOTROLA CORPORATION
STAMFORD, CONNECTICUT

For More Data Enter TA 4295 on Request Postal Card

AT YOUR SERVICE

SPECIALIZED ENGINEERING
SPECIALIZED EXPERIENCE
SPECIALIZED MACHINERY
FOR
TWISTING • FORMING
STRANDING • BUNCHING
COTTON • JUTE • MANILA • SISAL
NYLON • DACRON • ORLON • SARAN
PAPER • POLYETHYLENE • GLASS

TEXTILE • WIRE • CORDAGE and OTHER INDUSTRIES

HASKELL-DAWES

MACHINE CO., INC.
2231 E. Ontario Street
Philadelphia 34, Pa.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 228

Carton Staplers

An air-operated stapler that will close tops or bottoms of corrugated-paper cartons has been announced by Container Stapling Corp., 308 N. Park Ave., Herrin, Ill. The stapler is a complete unit that requires only to be hooked in to a 60-psi. air supply for operation.

Circle T-30 on Reader-Service Card

Cradle Truck

Drums of chemicals are easily loaded on an improved cradle truck developed by Morse Mfg. Co., Inc., 727 W. Manlius St., E. Syracuse, N. Y. Retracting casters, out of the way during the loading process, are returned to rolling position by a foot lever. A side opening is provided for drums that must be unloaded through the center bung.

Circle T-31 on Reader-Service Card

Feed-Water Treatment

A 35% solution of hydrazine in water is being marketed by Olin Mathieson Chemical Corp., 460 Park Ave., New York 22, N. Y. The product is used to deoxygenate boiler feed water, and in this form is nonflammable and easily handled.

Circle T-32 on Reader-Service Card

Stable Casein

Casein that will not harbor insects or break down from microbial attack is being manufactured in pilot quantities by the Chemical Div., Borden Co., 350 Madison Ave., New York 17, N. Y. All the usual properties of casein solutions are retained or improved in the new product.

Circle T-33 on Reader-Service Card

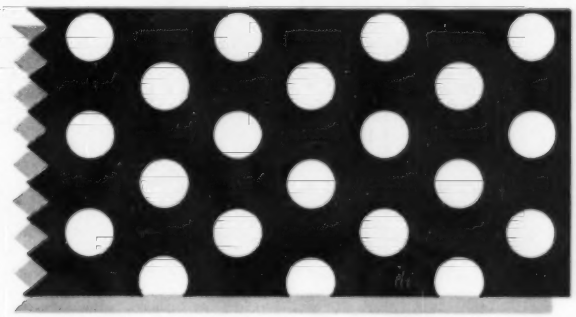
Pest Controller

A vaporizing unit that may be plugged into any 110-v. a.c. outlet eliminates flies, mosquitoes, and other insect pests in public places. Manufactured by General Industrial Co., 5738 N. Elston Ave., Chicago 30, Ill., the unit will handle up to 15,000 cu. ft. of space.

Circle T-34 on Reader-Service Card

CONTINUED ON PAGE 232

use NAPHTHOL DYES by gdc



for deep, brilliant shades — all around color-fastness — high productivity at low cost

Bright reds and yellows, deep rich navies, browns, wines and blacks either too difficult or expensive to achieve with other dyes are simply and inexpensively produced with GDC Naphthols in cotton and rayon, in pad, jig or continuous systems. Acetate, Dacron* and nylon may be dyed by special processes.

Naphthol colors are fast to washing, light, chlorine, alkali and cross-dyeing. Many Naphthols are used as ground colors for discharge printing where wash- and light-fastness are required.

A complete range of highly soluble Naphthol Powders are available. However, for greater economy in high-speed, large-volume operations the prepared liquid Naphtholate AS Solution brands are generally preferred.

The Fast Color Salts and Bases used for development are reliably uniform from batch to batch and most are nondusting for cleaner handling.

Our Technical Service Laboratories are ready to advise you on how to utilize Naphthol dyes in your particular operation.

*Polyester fiber of E. I. du Pont de Nemours & Co. (Inc.)

From Research to Reality

GENERAL DYESTUFF COMPANY

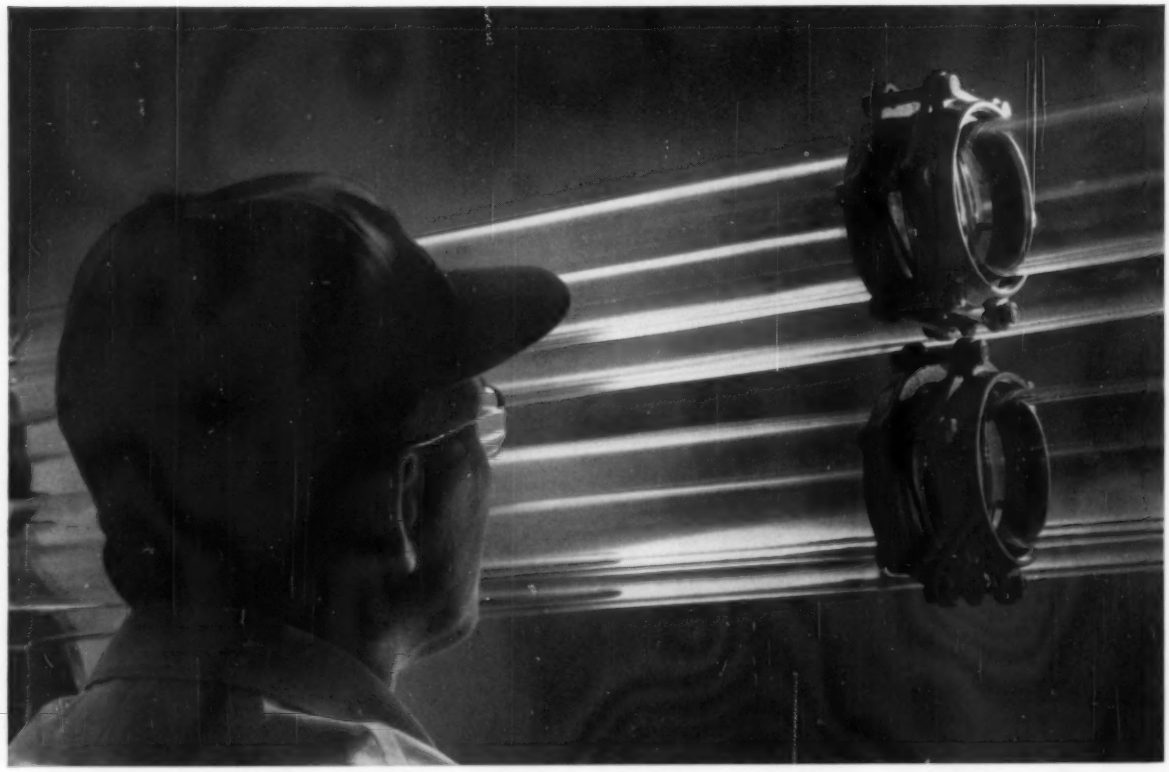
A SALES DIVISION OF

GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

Naphthol Dyes manufactured by the General Aniline and Film Corporation are sold outside the United States under the trademark "Fenaphtol."



You can see when it's clean!

Why Amerotron uses PYREX® glass pipe for handling dye-liquors

Step into Amerotron's integrated mill at Barnwell, S. C., and *see* next season's colors flowing from the dye house.

You can watch the colors because PYREX brand glass pipe is used to carry dye-liquors from the dye-mixing station to the kettles.

Why glass?

PYREX pipe was selected because glass (and *only* glass) lets you visually inspect the cleanliness of dye-handling lines. With glass you flush and clean pipes easily. You check on correct color flow with just a glance.

And with glass you can be sure there's *no* carry-over, no chance to pick up material from previous runs. That's because PYREX pipe is *smooth*, provides no place for contaminating build-up.

No corrosion

Even acid dyes are no problem with this pipe because it is, for all practical purposes, completely resistant to corrosion. (Example: You could run 5% hydrochloric acid at 212° F. through PYREX pipe for 203 years and still end up with two-thirds of the original wall thickness.)

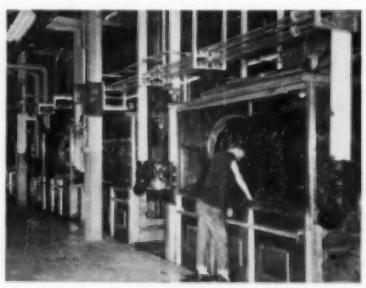
What else?

Engineers at Amerotron have found that PYREX pipe is plenty rugged, too. Installation is simple. The need for repair and replacement is practically nonexistent.

And when you consider *all* costs involved in installing and keeping a piping system that has to *last*, you'll be agreeably surprised at the way PYREX pipe stacks up.

How to find out

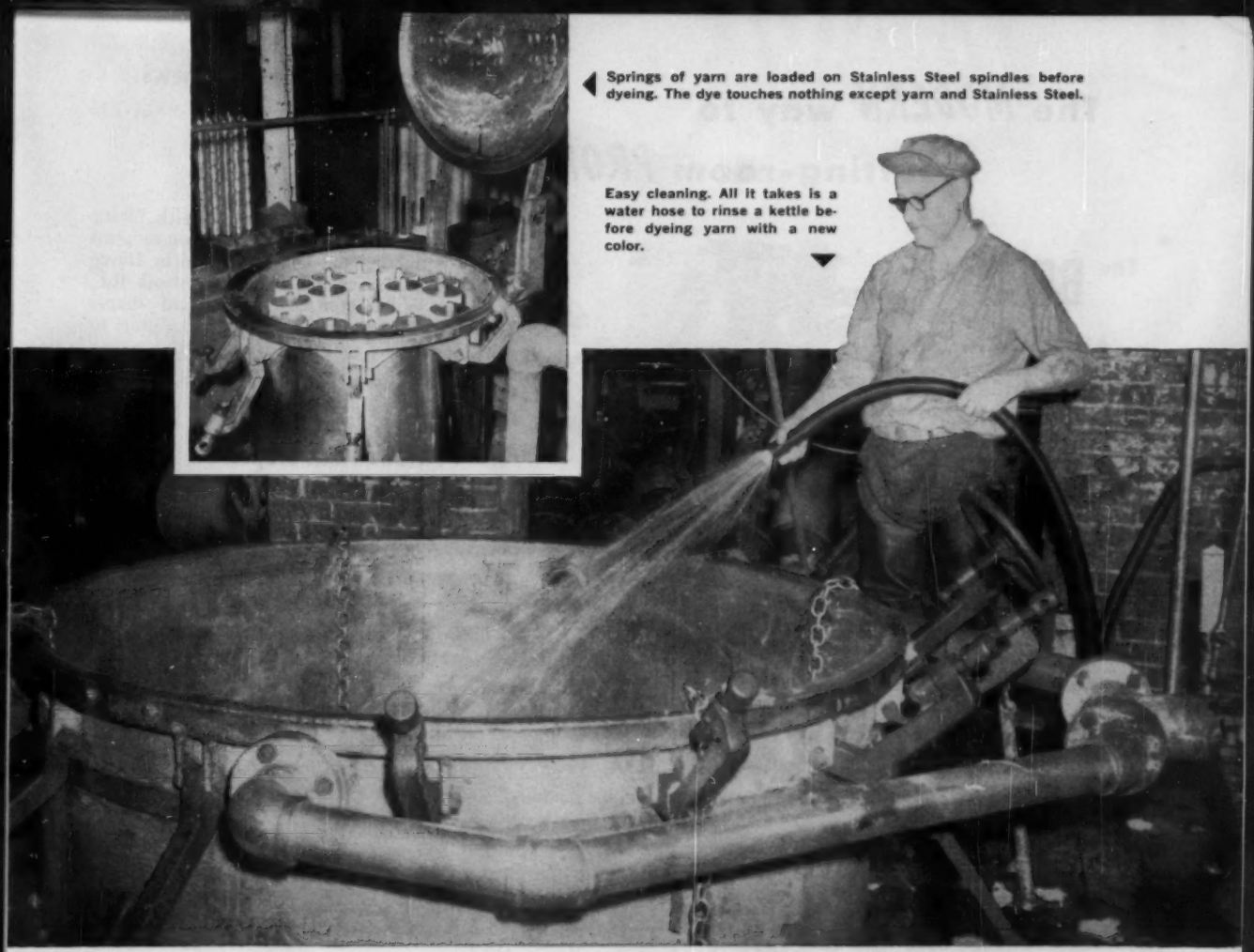
If you'd like to know more about the merits and means of putting PYREX pipe to work in your plant, send for this bulletin: PE-3 "PYREX Brand Glass Pipe and Fittings." Please address inquiries to Plant Equipment Sales at the address shown below.



Dye-liquors are mixed in a drug room overlooking the dye house and are delivered to the kettles by PYREX glass pipe at the Amerotron plant, Barnwell, S. C.

Corning means research in Glass

CORNING GLASS WORKS, 711 Crystal Street, Corning, N.Y.



Springs of yarn are loaded on Stainless Steel spindles before dyeing. The dye touches nothing except yarn and Stainless Steel.

Easy cleaning. All it takes is a water hose to rinse a kettle before dyeing yarn with a new color.

"Stainless Steel eliminates dye carry-over,"

says the Head Dyer and Chemist
Louisville Textiles, Inc. • Louisville, Kentucky

THE HOME OF FINCASTLE FABRICS, one of the largest textile mills devoted almost exclusively to the manufacture of woven decorative fabrics, produces fabrics in color combinations and different patterns numbering in the thousands.

The plant has been in operation since 1888, and for 60 years used cast-iron dyeing equipment. In 1948, they made a complete switch to Stainless Steel—in fact, the dyes now come into contact with nothing except Stainless and the stock being dyed.

To clean for a color change, they simply rinse their Stainless Steel equipment with water. With the old equipment, no matter *how* well cleaned, the new color was uneven because of contamination. And the cleaning job was a mess: operators had to boil out the kettles and consume valuable time.

Maintenance costs have been reduced drastically, and they end up with a better product. What more can you ask from Stainless Steel? Get it from your local steel warehouse. Specify it to your equipment manufacturer. Remember to ask for USS Stainless Steel.

United States Steel Corporation, Pittsburgh • American Steel & Wire Division, Cleveland • Columbia-Geneva Steel Division, San Francisco
National Tube Division, Pittsburgh • Tennessee Coal & Iron Division, Fairfield, Ala. • United States Steel Supply Division, Warehouse Distributors
United States Steel Export Company, New York

USS STAINLESS STEEL

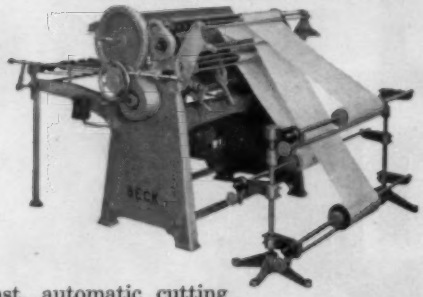
USS

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

UNITED STATES STEEL

The *MODERN* way to cutting-room *PROFITS*

The **BECK** AUTOMATIC ROLL SHEET CUTTER



Engineered for fast, automatic cutting from rolls to sheets, this versatile machine permits quick size change-over, lowers cutting costs, lessens handling and reduces waste.

Cuts any textile from rolls to sheets

Towelling, pillow cases, diapers, wiping cloths, duck and canvas are no problems to this machine. It cuts just about any textile or synthetic. Judge its profit making possibilities for yourself. Send for a catalog now.

CHARLES BECK MACHINE CORPORATION

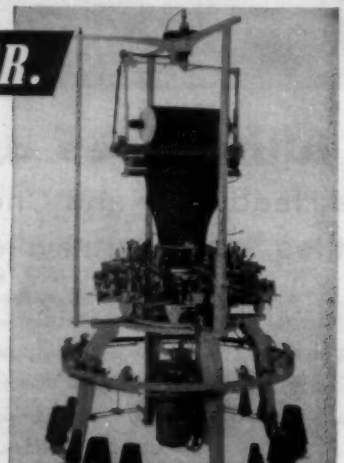
50 CHURCH ROAD, KING OF PRUSSIA, PA.

Pacemakers since 1864 in the ENGINEERED APPLICATION of Sheet Cutters and Slitters

ALL NEW...

TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE



HERE'S A TYPICAL EXAMPLE...

Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- **MINIMUM OF IMPERFECTIONS AND BROKEN NEEDLES**

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

TOMPKINS BROS. CO.

623 ONEIDA ST. • SYRACUSE 4, N. Y.

Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 230

Ducting

Glass fiber reinforced with plastic is used to make corrosion-resistant ducting and tanks marketed by Haveg Industries, Inc., 900 Greenbank Rd., Wilmington, Del. Standard shapes and fittings aid in developing units to fit any industrial requirement.

Circle T-35 on Reader-Service Card

Hand-Held Stapler

Compressed air actuates a carton stapler available from International Staple & Machine Co., Herrin, Ill. The redesigned model features more finger space, shorter trigger stroke, and easier reloading.

Circle T-36 on Reader-Service Card

Septic-Tank Activator

Sluggish septic-tank systems can be cleared and reactivated with a product produced by Rooto Corp., 17,319 Wyoming Ave., Detroit 21, Mich. Periodic use of the product will maintain septic tanks and drain fields in good condition, it is claimed.

Circle T-37 on Reader-Service Card

Plastic Storage Trays

Smooth, durable trays made from high-impact plastic have been announced by Fabri-Form Co., Byesville, Ohio. The trays are available in a series of sizes in a variety of colors.

Circle T-38 on Reader-Service Card

Resinous Adhesives

Thermoplastic resins are the base of a series of adhesives announced by U. S. Stoneware Co., Adhesives Div., Akron 9, Ohio. The fast-drying air-curing resins are suggested for joining textiles to foams and are available for spraying, brushing, or machine application.

Circle T-39 on Reader-Service Card

Electric Tractor

A small tractor that can pull up to 5,000 lbs. has been marketed by Lewis-Shepard, Watertown, Mass. Designed to be ridden or walked, the

Have you Troubles and Inefficiency

on your Looms due to uneven slashing of your Dye Beams?

B. Thies Beam Drier

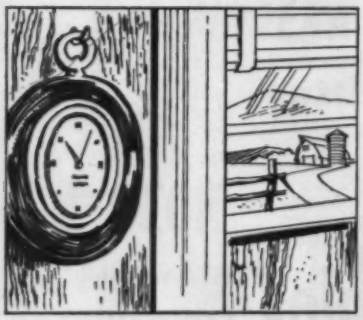
is the answer. The well known PRESSURE DRYING-METHOD now also applicable to beam drying. Short drying times — completely closed system — up to four beams.

To solve your problems, write to . . .

AMERICAN THIES CORPORATION

1013 W. Morehead St., Charlotte 8, N. C. or call FRanklin 5-0062

For more data, write this page number on Reader-Service card. →



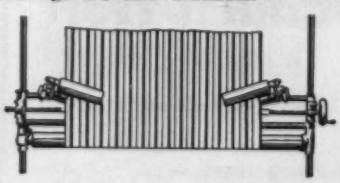
WORLD-FAMOUS GUIDER **for measuring atmospheric pressure is the Barometer which indicates changes in weather.**

WORLD-FAMOUS, **too . . . in textile plants everywhere is the ever-dependable**

MECHO AIR GUIDER

Famous for **INCREASING PROFITS, BOOSTING CLOTH PRODUCTION, REDUCING HANDLING COSTS, DAMAGE and LOSS.**

The MECHO Guider is so precision-engineered, it is accurate within one-eighth of an inch of a given mark and ranges from 1 to 400 ypm. Its hypersensitive selvage finger is guaranteed not to turn double edges. An ingenious control . . . without counterweights or linkages . . . infinitely adjusts selvage finger tension, while in operation, to suit the particular weight and weave of fabric. Stainless steel, acid- and moisture-resistant units with sealed bearings are also available.



MECHO Guiders have been standard equipment in hundreds of finishing plants for more than 20 years, handling woven and non-woven fabrics, semi-rigid plastics, artificial leather and rubber, felt and gauze. *What greater testimony to product performance can one ask?* Isn't that the kind of product you want in your plant?

PHONE, WIRE or WRITE TODAY for a MECHO complete Guiding Service catalog; it's free.

GUIDER SPECIALTY COMPANY
427 W. Rock Ave.,
New Haven 15, Conn.

tractor is 49 ins. long and 32 ins. wide and uses two 12-v. batteries to produce a top speed of 6½ mph. empty and 5.2 mph. loaded. Four speeds and reverse are standard features.

Circle T-40 on Reader-Service Card

Water Demineralizer

Capable of producing up to 100 gals. of mineral-free water, an ion-exchange unit is available from Enley Products, Inc., 1236 Broadway, Brooklyn 21, N. Y. When exhausted, the unit may be refilled with fresh demineralizing resins.

Circle T-41 on Reader-Service Card

Storage Racks

Racks that are designed to handle flat packages have been announced by M-H Standard Corp., 513-521 Communipaw Ave., Jersey 4, N. J. Adjustable rails equipped with wheels are mounted at an angle for easy first-in, first-out movement of packages.

Circle T-42 on Reader-Service Card

Ice-Melting Material

A chloride-free material 99.99% active for melting ice and snow off walkways has been developed by Speco Inc., 7308 Associate Ave., Cleveland 9, Ohio. The product is claimed to be noncorrosive to metals and leaves no messy residue.

Circle T-43 on Reader-Service Card

Contact Adhesive

A water-resistant adhesive useful in bonding materials together where large areas are involved has been marketed as Pliotac by Goodyear Tire & Rubber Co., Akron 16, Ohio. Combinations of wood, plastic, glass fibers, foam rubber, textiles, metals, ceramics, and paper are possible with the product.

Circle T-44 on Reader-Service Card

Carton Stapler

A hand-operated stapler with an actuated anvil has been announced by Container Stapling Corp., P. O. Box 247, Herrin, Ill. The unit is available in several sizes to suit various types of cartons.

Circle T-45 on Reader-Service Card

CONTINUED ON PAGE 236

PLUS VALUES ...all yours in

DARNELL
CASTERS AND WHEELS

for maximum long life, minimum maintenance

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life

LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

...OVER 4000 TYPES of CASTERS & WHEELS

Write for this FREE Data Book

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DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
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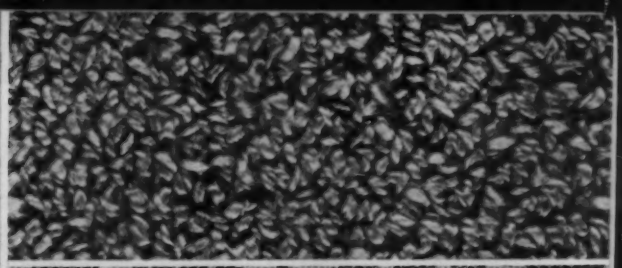
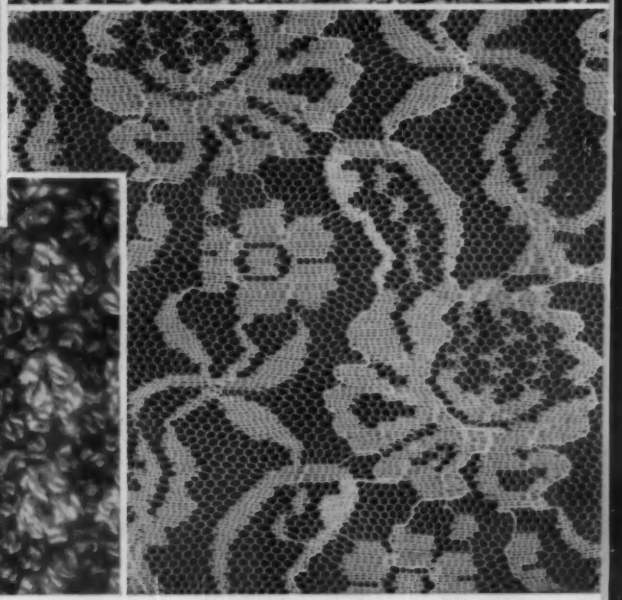




World's fastest 10-bar Raschel knitter

—from hairnets to heavy carpet

ALL KNITTED ON THE KIDDE KNITTER

Why is the Kidde Knitter the most widely used Raschel type machine in the world? The answer is exceptional versatility coupled with outstanding speed and reliability.

The range of gauges of the Kidde Knitter will produce anything from the sheerest tulle to heavy carpet — all with equal dependability. And special attachments make it even more versatile:

- A sinker bar produces tighter stitches . . . eliminates selvage troubles.
- A power let-off attachment for controlling rubber beams improves quality of elastic fabrics.
- A power yarn feed assures uniform quality at high speeds and permits the use of large warps.

These are just a few of the advantages that account for the popularity of the Kidde Knitter, both with the knitter who specializes in one type fabric and the knitter who depends on flexibility to meet the requirements of his trade. If you specialize in any one of the following fabrics . . . elastic fabrics, tulle and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or carpeting . . . or if you need versatility encompassing many of these types . . . the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

SEND FOR FABRIC SAMPLES

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details. Dept. KA3

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — JOHNSTON BUILDING, 212 SOUTH TRYON ST., CHARLOTTE, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Spinning Room, Greenwood Mills, Greenwood, S.C.

serving the textile industry for 60 years

"Foot friendly" Northern Hard Maple is the best floor you can put under your feet. Workers like its *resiliency*, its bright, tight structure that brushes dirt-free easily, fights scuffs, scars, dents. It's easy to refinish and lasts for years. Write for 1957 listing of **MFMA**-approved floor finishing products. See Sweet's (Arch. 13j-MA) for full technical data.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 592, Pure Oil Bldg., 35 E. Wacker Drive
Chicago 1, Illinois

NORTHERN HARD MAPLE
the finest floor that grows
BEECH and BIRCH

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 234

Lift Truck

Lewis-Shepard Products, Inc., Watertown, Mass., announces a mechanical lift truck for handling cable reels. The truck has lifting arms 36 ins. long, with an opening between forks of 22 ins., and can handle reels weighing up to 1,000 lbs.

Circle T-46 on Reader-Service Card

Fork Lift Trucks

Clark Equipment Co., Battle Creek, Mich., announces its Clarklift line of trucks. The trucks feature self-adjusting brakes, a balanced swing-up hood, solid tire models with drive and steer wheels of the same diameter, combination lift-tilt controls on the steering column, and all-purpose deep-tapered forks.

Circle T-47 on Reader-Service Card

Metal Coating

A clear metal coating that can be applied to smooth surfaces such as galvanized sidings, aluminum sheets, and painted areas is announced by Wilbur & Williams Co., Boston, Mass. Called Metal Bond, the coating can be applied by brush or spray and acts as an adhesive for paints as well as providing a protective coating to any surface.

Circle T-48 on Reader-Service Card

Welding Electrode

International Nickel Co., Inc., 67 Wall St., New York 5, N. Y., announces an electrode and filler wire and rod that makes it possible to weld nickel-iron-chromium alloy. The products are called 135 Ni-o-Nel electrode and 65 Ni-o-Nel filler wire and rod.

Circle T-49 on Reader-Service Card

Window Cleaner

A concentrated window cleaner is available from Selig Co., 336-350 Marietta St., N. W., Atlanta 1, Ga. Called Glitter, the cleaner contains no chemicals that are harmful to woodwork or paint. Mixed with water, it can be applied with sprayer, sponge, or soft cloth.

Circle T-50 on Reader-Service Card

CONTINUED ON PAGE 238

Out Goes LINT · FLY TRASH
from your
SPINNING FRAMES and ROVING FRAMES
Quickly • Economically

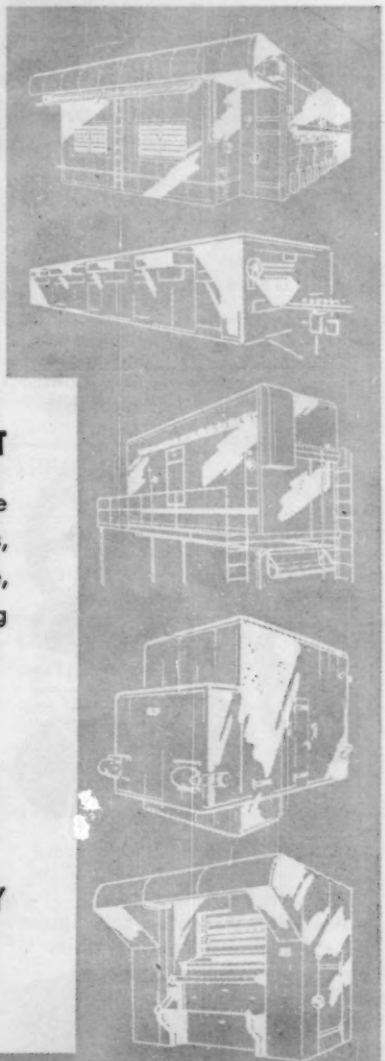
by using
M·B AMOSKEAG PNEUMATIC ROLL PICKER
MODEL A-VT-A
A pneumatic tool especially designed for the specific purpose of REMOVING LINT and FLY from the top rolls of Spinning Frames and Roving Frames. Saves time and does a better job by substituting mechanical cleaning instead of laborious hand methods. Air deflector prevents fly and lint being blown into yarn when spinning. Adjustable valve permits any desired spindle speed.
Write for Literature
M·B PRODUCTS
46 VICTOR AVE., Div. 16
DETROIT 3, MICHIGAN

Geo.S.HARWOOD & Son

SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863
50 LAGRANGE STREET
WORCESTER 8, MASS.

Two Reasons Why the Textile Industry Looks FIRST *to* "NATIONAL"...

FOR THE MODERN WAY TO MEET ALL ITS DRYING EQUIPMENT NEEDS



Leadership IN DRYING TECHNOLOGY PROGRESS

During the past thirty-seven years, "NATIONAL" research and design engineering have given to the Textile Industry consistently new concepts of drying procedures and equipment. Drying speed, efficiency and quality of textiles in all forms—from fibre to finished goods—have been revolutionized due in large measure to the patented features of "NATIONAL" design and construction.

One Source FOR ALL TYPES OF DRYING EQUIPMENT

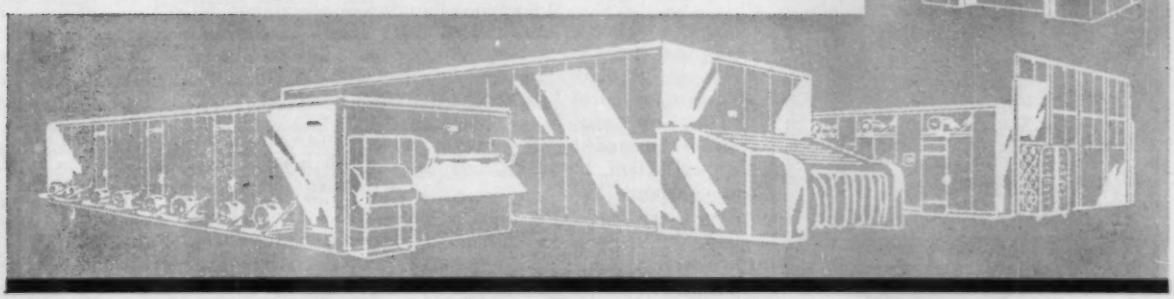
The list of "NATIONAL" dryers and conditioning units covers the full range of the Textile Industry's requirements—Piece Goods, Print Goods, Tenter, Roll, Carpet, Skein, Yarn, Rayon Cake, Package Yarn, Stock and Swatch Dryers; Nylon Heat Setting Machines.

Case histories of typical installations in the categories mentioned above will be gladly submitted upon request.

THE DRYING MACHINERY COMPANY

LEHIGH AVE. and HANCOCK ST., PHILADELPHIA 33, PA.

New England Agent: JONES & HUNT, INC., Gloucester, Mass.
Cable Address: "NADRYMA"—W. U. Code



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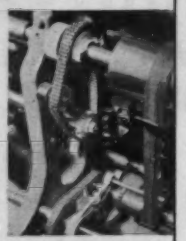
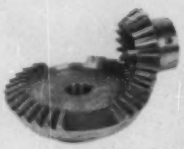
Gears, Cams and Chain Drives

for all makes and models



Picker Drop Shaft and Calender Gears

Coiler Gears

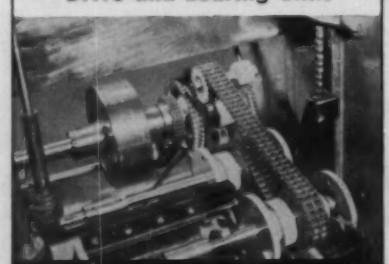


Roving Top Cone and Skip Gears

Lifter Rack and Gear Assembly

CAMS for constant ring rail speed and uniform bobbins — lock each layer of yarn and prevent sloughing.

Precision Patented Compound Drive and Bearing Units



Precision Gear & Machine Co.
2001 N. Tryon St. • ED 4-6857
Charlotte 1, North Carolina

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 236

Portable Lift

A 112-in. telescoping portable lift is available from Oster Mfg. Co., Wickliffe, Ohio. The lift has a capacity of 1,000 lbs. and can be used as a platform truck, straddle fork truck, portable elevator, or shop crane.

Circle T-51 on Reader-Service Card

Conveyor Belting

Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown 1, Ohio, announces conveyor belting made of cotton-nylon fabric. It is claimed that the belting is 25% lighter, has less stretch, and will operate over smaller pulleys at higher speeds than conventional belting.

Circle T-52 on Reader-Service Card

Portable Stitcher

A lightweight portable wire stitcher is announced by Ordnance Gauge Co., Philadelphia 25, Pa. The unit weighs only 25 lbs. and is easily carried to any plant location. Called the OG portable stitcher, the unit uses a standard 5-lb. spool of ribbon wire and makes about 200 stitches per minute on cardboard, fibre, wood, or leather.

Circle T-53 on Reader-Service Card

Rubber Compounds

Silicone rubber compounds for use in rapid one-step thick section curing are available from Silicones Div., Union Carbide Corp., 30 E. 42nd, New York 17, N. Y. The compounds have very low compression set and are useful for refrigerator door seals, oven door gaskets, heatproof and coldproof motor mounts, and other uses.

Circle T-54 on Reader-Service Card

Electric Motors

Lincoln Electric Co., Cleveland, Ohio, announces its re-entry into the electric-motor field. The company is producing a line of Linc-weld motors of 1 to 40 hp. that feature plastic insulation claimed to be resistant to chemical action, humidity, dust, lint, and oil vapor.

Circle T-55 on Reader-Service Card

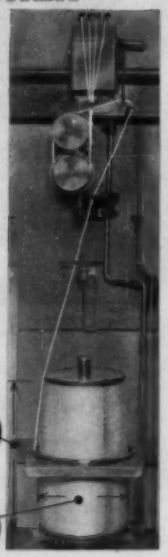
CONTINUED ON PAGE 242

THE NEW

5 POUND

FLETCHER

MASTER DUPLEX DOUBLER-TWISTER THREE STYLE PACKAGES



THE FLETCHER WORKS INC.
2nd & GLENWOOD AVE.
PHILADELPHIA 40, PA.

LEGAL NOTICE

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233)
SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION

Of Textile World published monthly, with add'l issue in July, at Albany, New York for October 1, 1957.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Published by McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York 36, N. Y.; Editor, Prentice M. Thomas, 330 West 42nd St., New York 36, N. Y.; Managing editor, Louise E. Wille, 330 West 42nd Street, New York 36, N. Y.; Business manager, Thomas Macaluso, 330 West 42nd Street, New York 36, N. Y.

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McGRAW-HILL PUBLISHING COMPANY, INC.
By JOHN J. COOKE, Secretary.

Sworn to and subscribed before me this 3rd day of September, 1957.

[SEAL] JANET A. HARTWICK.
(My Commission expires March 30, 1959)

Flooring Chosen Correctly And Laid Right Lasts Longer

Northern hard maple, beech, and birch offer a wide range of uses and color possibilities; yet in general characteristics the three materials are much alike.

All three are close grained, hard fibered, and free from slivering and splintering; and they polish under friction to increase their wearing qualities. All three have natural beauty when they are given a transparent finish and are suitable for use in fine office buildings or under hard service in factories.

All three are particularly clean and sanitary since the closeness of their grain and the smoothness of their surfaces afford no lodging place for germ-laden dirt.

When the three materials are laid, the floor is a smooth one-piece area of the hardest wood because each piece is accurately matched at the sides and ends.

Beech and Birch Can Replace Maple

Northern hard maple is dense, strong, heavy, hard, and durable. The color of the heartwood is brownish; the sapwood is much lighter. The grain is close and is sometimes curly or birds-eye.

Hard maple has the unusual ability to resist pointed pressure without abrasion. Heavy-duty finishes and transparent stains have been developed to keep the surface attractive and highly polished.

Northern beech and birch have slightly more grain pattern than hard maple and have more natural color. In physical qualities, they are close enough to maple to sometimes replace it.

Thick Flooring Is for Hard Wear

Hardwood flooring is bundled by averaging the lengths. A bundle may include pieces from 6 ins. under the normal length of the bundle to 6 ins. over. No piece shorter than 9 ins. is admitted.

Flooring $\frac{25}{32}$ in. thick is commonly used for general purposes. Where floors are subjected to extraordinary strain and wear, 33/32-, 41/32-, 52/32-in. thicknesses are used.

Jointed flooring (also called square-edge flooring) is easy to replace in industrial floors.

The three flooring woods are made in four grades:

1. First grade. It is $\frac{25}{32}$ in. thick and thicker. The face is practically free of all defects, but the varying natural color of the wood is not a defect. This grade combines appearance and durability.

Standard lengths of all widths of this grade are in 2-ft. bundles and longer as the stock will produce. Not over 30% of the total footage of an order is bundles under 4 ft.

2. Second grade. This flooring is $\frac{25}{32}$ in. thick and thicker. Tight sound knots and slight imperfections in dressing are admitted, but it must lay without waste.

Standard lengths in all widths are 2-ft. bundles and longer as the stock will produce. Not over 45% of the total footage is in bundles under 4 ft.

This grade is made for service rather than appearance. It admits tight sound knots, prominent discolorations, numerous dark-green or black spots or streaks, slight checks not exceeding 3 ins. long and running parallel with and well inside the edges of the strip, and dark spots or streaks with slight checks in the center.

Other defects allowed are small rough spots that cannot be wholly removed by sanding the laid floor, slightly torn edges, short tongues if they are long enough to hold properly in the floor, and other small defects.

3. Third grade. It is $\frac{25}{32}$ in. thick and thicker. It must lay well and give a good serviceable floor.

Standard lengths are 1½-ft. bundles and longer as the stock will produce. Not over 65% of the total footage is in bundles under 4 ft.

This flooring is suitable for factories and warehouses where good wearing qualities are required with medium cost and appearance. This grade may contain all defects common to maple, beech, and birch; but the wood must be firm and serviceable.

It will not admit: voids on edges, knotholes over ¾ in. in diameter, partially unsound knots where the unsound portion is over 1 in. in diameter, shakes, heart checks, badly split ends,

BETTER LUBRICATION

FOR BALL AND ROLLER BEARINGS

BALL BEARING LUBRIPLATE . . . a most effective grease type lubricant that also protects ball and roller bearings against rust and corrosion. Highly recommended for speeds up to 5,000 RPM and temperatures up to 300° F.

LUBRIPLATE No. 205 . . . an unusually light consistency, grease type lubricant made for use in anti-friction bearings operating at speeds in excess of 5,000 RPM.

LUBRIPLATE Nos. 1, 2, 4 and 8 are fluid type lubricants of various viscosities that have given outstanding results in anti-friction oil type bearings. Nos. 1 and 2 are recommended for high speed applications; nos. 4 and 8 are recommended for slow speed, heavy load applications.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Write for free "LUBRIPLATE DATA BOOK". . . a valuable treatise on lubrication. LUBRIPLATE DIVISION, Fiske Brothers Refining Company, Newark 5, N. J. or Toledo 5, Ohio.

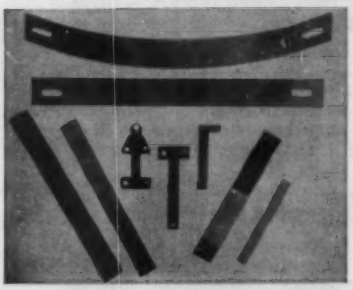
(Advertisement)

GARLAND MFG. 91st YEAR

Garland Manufacturing Company, Saco, Maine has been manufacturing rawhide products for the textile industry since 1866. H. P. Garland, founder of the company, was the author of a text on the water buffalo and rawhide applications in the textile industry which is used as a standard reference source on the subject. The company buys choice water buffalo hides from Java, Burma and other Far East sources. These hides are cured for the Garland concern in England. The rawhide is further processed in Maine and famous Garland Pickers and other rawhide products are manufactured for textile users.

NEW LINE OF LEATHER PRODUCTS

A need of the mills for superior leather products of uniform quality has prompted Garland Mfg. Company to produce check straps and by-products, such as picker checks, hold up straps, etc., of the finest imported hair-on leather as well as binder leather from the best oak tanned leather available.



In many cases, it has been found that these superior products, because of Garland's production methods, are selling at prices lower than inferior grades.

REINFORCED LOOM PICKER

Research based on a survey of mills has enabled the Garland Manufacturing Company to produce a picker that far out-lives previous types. The new loom picker has a reinforced stick hole that corrects a basic weak point of pickers generally . . . provides much longer service. Likewise the spindle hole has been improved and strengthened by locked-in flanges at both ends. The picker head has been strengthened by a heavier outside layer of rawhide, eliminating the need for a rivet through the picker head. Mills using the reinforced loom picker have reported much longer life of the picker with resultant savings.

ALL 3 GO TOGETHER

GO TO GARLAND FOR ALL 3

It's a more efficient loom with Garland's rod lubricant, sponge leather bunter and rawhide picker! Here's why:

1. ***GARLAND ROD LUBRICANT AND APPLICATOR*** – Overcomes disadvantages of old-fashioned methods. Lubricant's tacky substance clings to rod. Eliminates oil drip, regular grease pile-up, overheating, excessive friction, frequent loom stoppage. Applicator fits all size rods. Squeeze of tube spreads uniform thin film of grease.
2. ***GARLAND SPONGE LEATHER BUNTER*** – Exclusive genuine sponge leather "takes" shock better. Long life assures economical operation. "Proved" through wide industry use. Now available in unlimited quantities for the first time.
3. ***GARLAND GENUINE RAWHIDE LOOM PICKER*** – Reinforced stick hole for longer service. Heavier, stronger picker head . . . pressure molded . . . improved spindle hole . . . water Buffalo hide — toughest material available, anywhere.

WRITE TODAY FOR FREE INFORMATION ABOUT GARLAND PRODUCTS FOR GREATER LOOM EFFICIENCY

Garland MANUFACTURING CO.

Manufacturers of RAWHIDE LOOM PICKERS • SPONGE LEATHER BUNTERS • RAWHIDE HAMMERS AND MALLETS

54 WATER STREET • SACO • MAINE

For more data, write this page number on Reader-Service card.

and imperfections in manufacture that materially impair the serviceability.

4. Fourth grade. This grade is $\frac{3}{32}$ in. thick and thicker and may contain defects of all character, but it must lay a serviceable floor with cutting.

Standard lengths in all widths are 1½-ft. bundles and longer as the stock will produce.

It is best to specify and use the standard run of lengths in the different grades of flooring instead of special long lengths because lengths 4 or 6 ft. long or longer are much more expensive without compensating benefits.

Modern methods of manufacturing hardwood flooring produce a larger proportion of shorter lengths than old-time methods. Now defects are cut out closer to improve the average quality of flooring.

Shorter lengths combined with longer lengths cost no more to lay. And they make as good or better floor at a material saving in cost.

Flooring Needs a Lot of Care

Flooring is made from lumber kiln dried to the proper moisture content. After kiln drying, the lumber is cooled by air and cut into strips. Then it is milled, bundled, and stored in dry, well-ventilated warehouses.

Flooring must have this same care in handling after you receive it. To insure most satisfactory results in the finished floor, observe these precautions:

1. Don't unload or move flooring by truck in rain or snow. If atmosphere is foggy or damp, cover the flooring with a tarpaulin.
2. Don't store flooring in leaky or open buildings.
3. Don't unload flooring outside of shelter at the job.
4. Provide protected ventilation to keep relative humidity at a minimum.

Don't store or lay flooring in a cold damp building. Wait until plastering and cement work are thoroughly dry and woodwork and trim are installed.

Don't lay flooring tight against studding or walls.

When a floor is being laid, heat the building to 70° F. and pile the flooring loosely in the building several days before it is laid.

If you observe these precautions, later development of open joints or cupping caused by moisture absorption will be prevented. *Maple Flooring Manufacturers Association*

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 238

Fork Truck

Lewis-Shepard, Watertown, Mass., announces an improved version of its Model E electric fork-truck line. The trucks are compact and maneuverable and range in capacity from 1,000 to 4,000 lbs. Other features of the trucks are: improved elevating assemblies, hydraulic systems, steering mechanisms, and controls.

Circle T-56 on Reader-Service Card

Thermal Cutout

Dodge Mfg. Corp., Mishawaka, Ind., announces a thermal cutout to be used with its Flexidyne dry-fluid drive to protect it against overheating. Recommended especially for unattended installations, the cutout can be mounted on the side of the Flexidyne and will throw a special switch to the off position in overheating of the unit.

Circle T-57 on Reader-Service Card

Cleaner for Motors

A safety solvent detergent, composition No. 117, for cleaning electric motors has been developed by Oakite Products, Inc., 19 Rector St., New York 6, N. Y. It can also be used safely on other equipment where water cannot be used. The solvent is applied full strength by a brush, emergence, or nonatomizing spray. No rinsing is necessary; parts may be blown dry with compressed air.

Circle T-58 on Reader-Service Card

Support for Power Cables

Offset reducers with left-hand or right-hand bends are available for the supports for power cables manufactured by T. J. Cope, Inc., Third & Walnut Sts., Collegeville, Pa. The reducers are furnished in standard widths of 6, 9, 12, 18, and 24 ins.; straight reducers are also available in the same combinations.

Circle T-59 on Reader-Service Card

Industrial Boiler

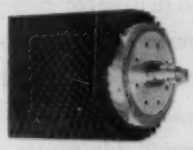
An industrial boiler has been introduced by Cleaver-Brooks Co., 326 E. Keefe Ave., Milwaukee 12, Wis. The boiler is a complete package and has forced draft.

Circle T-60 on Reader-Service Card

YEARS
OF SATISFACTORY MILL SERVICE WITH JENKINS' METLKOR BRUSHES

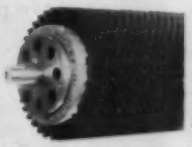
BRVM Motorized HERMAS Model Vertical Brushing Machine

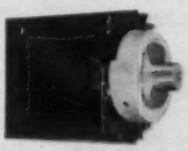
"The high quality standards set by our engineering department for brushes used in our machines are amply covered by Jenkins' METLKOR Brushes. They have stood years of satisfactory mill service for our customers and, of course, for us," stated Mr. Robert Simpson, Sales Representative of Hermas Division, Curtis and Marble Machine Company. Hermas has proven the efficiency of Jenkins' METLKORS – the long lasting brush that can be rebristled. If you have any standard or special brush problems, write us today



METLKOR brush used in Hermas Brushing Machine: precision made, accurately balanced. Filled with efficient long life Dupont "Tynex" Nylon. Available in fibre, hog bristle, etc.

METLKOR brush used in Hermas Shearing Machine: tufted construction, ruggedly built, refillable when worn. Available in fibre, hog bristle, Dupont "Tynex" Nylon, etc.



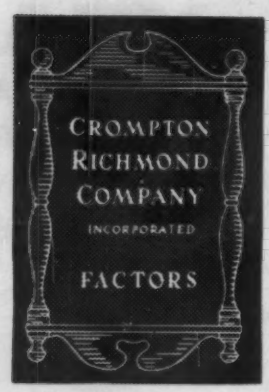


METLKOR brush used in Hermas Beaming, Measuring and Brushing Machine: light weight, for long trouble free life. Available in fibre, hog bristle, Dupont "Tynex" Nylon, etc

Specify Jenkins' METLKOR
the original . . . the best *Metal Core* brush

METLKOR®
CYLINDER BRUSHES
and LIFEWOOD® WOOD BACKED BRUSHES

M. W. JENKINS' SONS, INC.
— Serving Industry for 80 Years —
531 Pompton Ave., Cedar Grove
Essex County, N. J. • CEnter 9-5150



"Working" Capital

Working capital means: "always on the job." Capital that takes a leave of absence when you need it most is not a happy asset.

Crompton streamlines capital operation, gives you ready cash in place of receivables. You concentrate on putting goods on the move and Crompton does the rest. You are free of collection headaches and credit risks, too. Free to plan a more profitable future.

The Human Factor

CROMPTON-RICHMOND CO., INC.
1071 Avenue of the Americas, New York 18

Crompton-Richmond-Joel Hurt Co.
Glenn Building, Atlanta 1, Georgia

NEWS ABOUT SUPPLIERS

AIR REDUCTION CHEMICAL CO., DIV. OF AIR REDUCTION CO., INC., New York, N. Y.—Is expanding its vinyl-acetate-monomer plant at Calvert City, Ky. . . . **ALLIED CHEMICAL & DYE CORP.**, New York, N. Y.—Is expanding its caprolactam plant at Hopewell, Va. The Solvay Process Div. is also completing an expansion program doubling the capacity of its Brunswick, Ga., mercury-cell chlorine-caustic soda plant. . . . **ALLIS-CHALMERS MFG. CO.**, Milwaukee, Wis.—Has formed Allis-Chalmers International as a major operating division. P. F. Bauer has been named managing director.

AMERICAN AIR FILTER CO., INC., Louisville, Ky.—Has announced that C. W. Dean & Assoc., Memphis, Tenn., and Air Engineering Co., Kalamazoo, Mich., have been named sales representatives. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Has appointed Dr. William H. Bowman general manager of the Organic Chemicals Div. V. E. Atkins has been named general manager of the newly organized Manufacturing Services Div. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has appointed three supervisors in the Marcus Hook plant, Film Div.: W. B. Johnson, Jr., E. L. Carter, and Lew H. Gates. J. C. Dever has been appointed an industrial engineer at the plant. . . . **ASKANIA REGULATOR CO.**, Chicago, Ill.—Has named W. G. Holzbock as chief engineer.

MARK T. GILKISON (left) has been appointed manager of the Industrial Sales Div., Gates Rubber Co., Denver, Colo. ALFRED J. GOVIN (center) has been named sales representative to the textile mills of Canada, New England, and parts of the Middle West for Howard Bros. Mfg. Co., Worcester, Mass. H. C. HERNDON (right) has been appointed sales representative for Hartford Rayon Co., New York, N. Y. His headquarters will be in Atlanta, Ga.

BECCO CHEMICAL DIV., FOOD MACHINERY & CHEMICAL CORP., Buffalo, N. Y.—Has started building a new distributing center in Framingham, Mass. The company has announced the following transfers on its sales staff: E. M. Roth, Jr., western New York area; A. J. Raynor, Jr., Ohio-Indiana area; F. A. Kraft, New York-Philadelphia area; D. A. Grenon, Midwest area. . . . **BECKMAN INSTRUMENTS, INC.**, Fullerton, Calif.—Has appointed W. F. Kamsler product line sales supervisor, System Div. . . . **BORDEN CO., CHEMICAL DIV.**, New York, N. Y.—Has appointed S. R. Sweet and J. A. Bushee to its Coating and Adhesives Dept.

CELANESE CORP. OF AMERICA, New York, N. Y.—Has named M. D. Ewing assistant manager of the Mill Sales Relations Dept., Textile Div. A. F. Brinsmade and C. R. Matchett have joined the division's Chemical Engineering Dept. as senior process engineers. The company has also announced the formation of a Textile Market Relations Dept., headed by H. W. Vervoort. . . . **CHASE BAG CO.**, Chicago, Ill.—Has placed H. B. Rue in charge of sales of textile, Saxolin, and small paper bags. . . . **CHEMSTRAND CORP.**, Decatur, Ala.—Has moved its district sales office for Acrilan and nylon at Dedham, Mass., to a new location at Needham Heights, Mass. The company has appointed B. Ajdukiewicz group leader in the Dyeing and Finishing Dept., Research and Development Div.

CONTINENTAL SYNTHETIC TEXTILES, INC., New

L. F. Dommerich & Co., Inc.

Executive and General Offices

271 MADISON AVENUE, NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

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BUSINESS ESTABLISHED 1840

●

L. F. Dommerich & Co. California Corp.

819 Santee St., Los Angeles Trinity—7171

Eliminate broken filaments on Dope-Dyed Nylon with

STEIN HALL SUPRANYL

Supranyl possesses unusual adhesion properties for dope-dyed yarn where the normal polyacrylic sizes fail to render adequate loom protection against broken filaments. Light amber in color, it is readily removable in the scouring bath.

***Above material extracted from Stein Hall Technical Bulletin. Available on request.**

STEIN HALL SUPRANYL*
SPECIFICATIONS:
BASE: Solution of copolymerized organic acids.
VISCOSITY: 800 plus or minus 200 cps. Brookfield at 20°C.
pH: 1
ACTIVE INGREDIENTS: 30% minimum.
COLOR: Clear to light amber.
WEIGHT PER GALLON: 9.6 pounds.
MECHANICAL STABILITY: Very good.
STORAGE LIFE: Minimum 6 months.
APPLICATION:
In the sizing of dope-dyed nylon yarns, Supranyl is diluted with cold or lukewarm water to a 2-7% concentration, depending upon the twist, denier, number of filaments in the yarn, and construction of the fabric to be woven.
Supranyl is the only warp size which adheres properly to dope-dyed nylon and covers the yarn throughout. Supranyl is the only warp size that provides adequate loom protection for dope-dyed nylon as well as natural yarns.
Field tests prove better adhesion for Supranyl than any other dope-dyed filament nylon size. Prove it to yourself. Contact Stein Hall today and our qualified technical salesman will be glad to set up a trial run in your plant.
STEIN SH HALL
285 MADISON AVENUE NEW YORK 17 N. Y.

NOW, in one operation...

Remove rust, oil, grease from STEEL REEDS

with NEW multi-purpose

OAKITE RUSTRIPPER

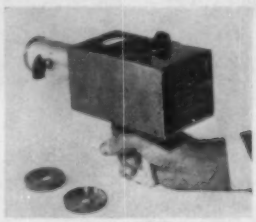
Ever hear of a safe, *alkaline* rust remover? One that degreases and derusts in one operation... and strips paint, too? Oakite Rustripper does all three, and does it safely. No cyanide, no troublesome fumes, no disposal problems. You'll be amazed at how much time you'll save with Oakite Rustripper. Call your local Oakite Technical Service Representative for a demonstration, or write to Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

Export Division Cable Address: Oakite

OAKITE

Technical Service Representatives in Principal Cities of U. S. and Canada

TEST FOR STATIC WITH ELECTROSTATIC VOLTMETER



- Portable
- Rugged
- Sensitive

Model CS-66

The Electrostatic Voltmeter developed by the Institute of Textile Technology was designed to detect and measure electrostatic charges generated on textile materials during processing. This unit is portable and may be aimed like a gun. It is extremely sensitive, with provisions made to permit reduction of sensitivity to one tenth or one hundredth. Therefore the Electrostatic Voltmeter provides an indication of the amount of electrical charge on moving or stationary equipment or materials. The unit is not limited to textiles but to any industry where electrostatic charges present a problem.

As our name implies we also welcome the opportunity to work on custom design and manufacture of testing instruments of all types for individual and general needs.

Visit our Booth, AATCC Exhibit, Boston, Mass.

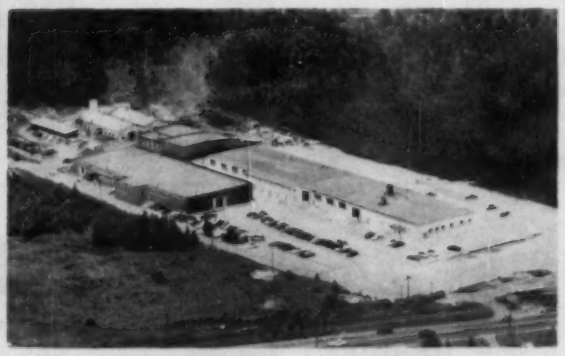
CUSTOM SCIENTIFIC INSTRUMENTS, INC.

541 Devon Street Kearny, N. J.

NEWS ABOUT SUPPLIERS Continued

York, N. Y.—Has changed its name to Sniafibres Corp. . . . **CORN PRODUCTS SALES CO.**, New York, N. Y.—Has named R. W. Bond manager of the sales-service department. . . . **CRUCIBLE STEEL CO. OF AMERICA**, Pittsburgh, Pa.—Has appointed J. D. Dickerson manager of steel production, with offices in Pittsburgh. . . . **DARNELL CORP. LTD.**, Downey, Calif.—Has appointed R. J. Geberth manager of its New York Div. . . . **DIAMOND CRYSTAL SALT CO.**, St. Clair, Mich.—Has elected S. S. Meilstrup a director. . . . **DIAMOND STATE FIBRE CO. OF CANADA LTD.**, Toronto, Ont.—Has changed its name to Continental Diamond Fibre of Canada Ltd.

DOW CHEMICAL CO., New York, N. Y.—Has announced the formation of a sales group for Zefran, the company's new textile fiber. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Has appointed Dr. S. R. Detrick assistant director of sales for chemicals in the company's Dyes and Chemicals Div. . . . **FABRIC RESEARCH LABORATORIES, INC.**, Dedham, Mass.—Has announced that N. J. Abbott has joined the senior research staff. . . . **FAIRBANKS CO.**, New York, N. Y.—Has announced the opening of its Chicago branch office and warehouse. . . . **FAIRBANKS, MORSE & CO.**, Chicago, Ill.—Has announced that P. S. Proctor, manager of the New Orleans branch, is retiring effective January 1, 1958.



COCKER MACHINE & FOUNDRY CO., Gastonia, N. C., has completed the transfer of its facilities from Gastonia to its new plant at Ranlo, N. C. The latest move involved the offices, engineering department, machine shop, warehouse, and erecting room.

FLETCHER WORKS, INC., Philadelphia, Pa.—Has expanded its narrow-fabrics loom-rebuilding department. The company has appointed Eldon Stowell manager of the yarn-processing-machinery division. . . . **GEIGY DYESTUFFS, DIV. OF GEIGY CHEMICAL CORP.**, Ardsley, N. Y.—Has appointed H. L. Steen sales manager. . . . **GENERAL ANILINE & FILM CORP.**, New York, N. Y.—Has appointed H. G. Shelton director of marketing for the Dyestuff & Chemical Div. . . . **GOODYEAR TIRE & RUBBER CO., CHEMICAL DIV.**, Akron, Ohio.—Has named D. S. Black sales general manager of the rubber department. The company's New York district office has moved to 400 Park Ave. . . . **GRATON & KNIGHT CO., INC.**, Worcester, Mass.—Has purchased Warren Belting Co., also of Worcester.

HEYDEN NEWPORT CHEMICAL CORP., New York, N. Y.—Has named T. H. Risch manager of the New York territory. . . . **LAMSON CORP.**, Syracuse, N. Y.—Has announced the appointment of R. C. Long as New York regional manager. . . . **LEWIS-SHEPARD PRODUCTS, INC.**, Watertown, Mass.—Has named E. S. Miller senior sales and service representative in Minnesota and western Wisconsin. . . . **LINK-BELT CO.**, Chicago, Ill.—Has moved into its new Los Angeles plant at 1200 Sycamore St., Montebello. . . . **LORD MFG. CO., SPECIAL PRODUCTS DIV.**, Erie, Pa.—Has announced the following appointments of technical sales representatives: P. E. Dochety, Central and Midwestern states; J. Brennan, Eastern states. . . . **MORNINGSTAR, NICOL, INC.**, New York, N. Y.—Has

for superior finishes...

complete removal of size is a first essential

RAPIDASE®

UNEQUALLED FOR DE-SIZING AT HIGHEST TEMPERATURES AND AT HIGHEST SPEEDS

In concentrations to meet every requirement ... in liquid or powder form ... RAPIDASE is universally used for cottons and all fabrics containing man-made fibres.

WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N. Y.

LOCKWOOD GREENE PROJECTS IN...

COTTON

Lockwood Greene's work, originating in 1832, was the design of cotton mills. In the field of cotton textiles, Lockwood Greene has had over 2,400 engagements, and has designed projects totaling almost a half billion dollars in value.

Utica & Mohawk Cotton Mills Division, J.P. Stevens & Co. Inc., Clemson, S. C. Plant

Reputed to be the largest one story, completely air conditioned textile plant in the world, the plant produces sheetings from bale to cloth, with spinning, weaving, sewing and finishing all under one roof.

CONTINUOUS MANAGEMENT SERVICES FROM SITE SELECTION TO PLANT COMPLETION

LOCKWOOD GREENE ARCHITECTS • ENGINEERS

BOSTON 16, MASS. 316 Stuart Street — **NEW YORK 17, N.Y.** 41 East 42nd Street — **SPARTANBURG, S.C.** Montgomery Building

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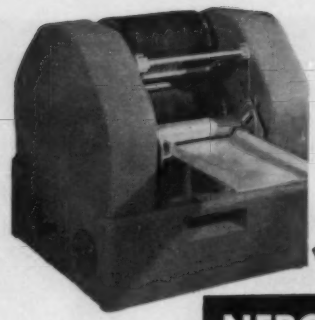

NEW

IMPROVED

NEPOTOMETER

Now you can avoid costly guess-work on the nepping quality of cotton. This high precision instrument simulates the manufacturing phases and measures the fiber's nepping potential.

Originally developed by N. C. State College School of Textiles under contract with U. S. Dept. of Agriculture. *Now* redesigned and re-engineered to meet rigid standardization specifications.

Write today for detailed literature on this proven, money-saving instrument.

WRIGHT MACHINERY COMPANY

DIVISION OF SPERRY RAND CORPORATION

DURHAM, NORTH CAROLINA

CANADA: Sperry Gyroscope Ottawa Limited
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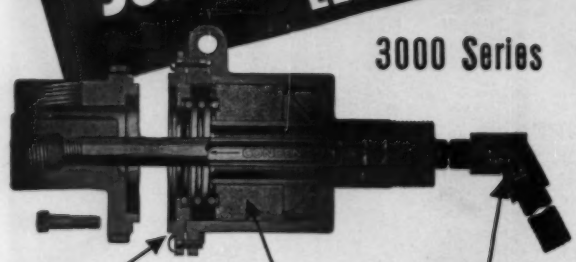
EXPORT: 13 East 40th Street,
New York 16, N. Y., U. S. A.

Johnson Joint with SYPHON ELBOW

3000 Series



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

WRITE FOR FACTS

on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

814 Wood St., Three Rivers, Mich.

negotiated for the acquisition of Federal Adhesives Corp. . . . **NASHUA CORP.**, Nashua, N. H.—Has appointed W. H. Foster director of sales.

NATIONAL VULCANIZED FIBRE CO., Wilmington, Del.—Has announced that E. R. Perry has gone to Europe to study the future markets for the company's textile products in the European textile industry. . . . **OLIN MATHIESON CHEMICAL CORP., FILM DIV.**, New York, N. Y.—Has named a special sales-service representative to each of its district offices. E. Menes, Jr., will operate out of the Middle Atlantic district office, Harrisburg, Pa. E. H. Dayton will operate out of the Midwestern district office in Chicago. . . . **REYNOLDS METALS CO.**, New York, N. Y.—Has appointed R. D.Riedell regional representative of textile sales, with headquarters in New York. . . . **RIGGS & LOMBARD**, Lowell, Mass.—Has elected E. F. Hayes executive vice president. . . . **SHAWINIGAN RESINS CORP.**, Springfield, Mass.—Has announced that E. C. Knapp has joined the research department. H. E. Graulich has been named a production-supervisor trainee in the production department, and J. R. Danner has joined the product-development department. . . . **STAUFFER CHEMICAL CO.**, New York, N. Y.—Has promoted J. M. Werrell to district sales manager, Ohio valley territory, of the company's chemicals division. . . . **STEIN HALL & CO., INC.**, New York, N. Y.—Has appointed E. Thompson general sales representative in its Chicago branch office.

U. S. RUBBER CO.'s new research center at Wayne, N. J., has recently been opened. The main research building (above) contains the company's Central Research Dept., executive offices, and 48-unit laboratories devoted to basic research. Other buildings include the engineering research building and the chemical-engineering building.

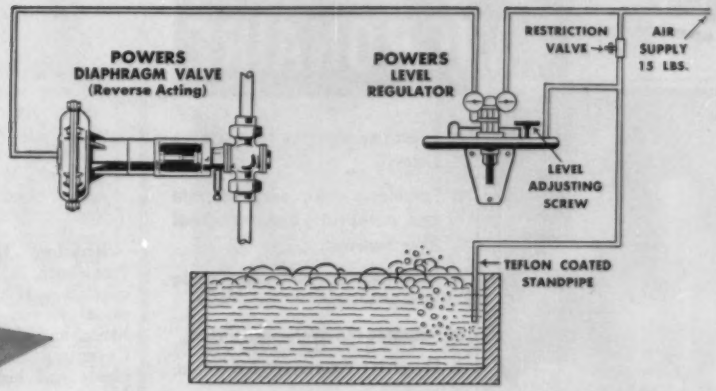
SUN CHEMICAL CORP., Long Island City, N. Y.—Has appointed J. J. Watson advertising manager, chemicals group. . . . **UNION CARBIDE CHEMICALS CO., DIV. OF UNION CARBIDE CORP.**, New York, N. Y.—Has promoted R. A. Lewis, R. S. Brissette, and F. C. King to new posts in the Textile Fibers Dept. Mr. Lewis becomes a group leader in the New Fiber Sales Development Dept. Mr. Brissette has been appointed a group leader, Dynel Sales Development, and Mr. King has been appointed sales planning coordinator of the fibers department.

UNITED STATES STEEL CORP., Pittsburgh, Pa.—Has appointed A. F. Berliner media supervisor in the advertising division. . . . **WATSON & DESMOND**, Charlotte, N. C.—Has appointed H. D. Lanier representative in the Georgia-Alabama area. . . . **WESTVACO CHLOR-ALKALI DIV., FOOD MACHINERY & CHEMICAL CORP.**, New York, N. Y.—Has named F. A. Gilbert president. Mr. Gilbert will continue as president of Becco Chemical Div. . . . **WYANDOTTE CHEMICAL CORP., MICHIGAN ALKALI DIV.**, Wyandotte, Mich.—Has named J. U. Wolter resident sales representative. He has been assigned to the company's Western district office, Chicago, Ill.

control
SIZE
level...

not
FOAM
level

POWERS
PROCESS CONTROL



POWERS SYSTEM CONTROLS SIZE LEVEL TO WITHIN 1/8"

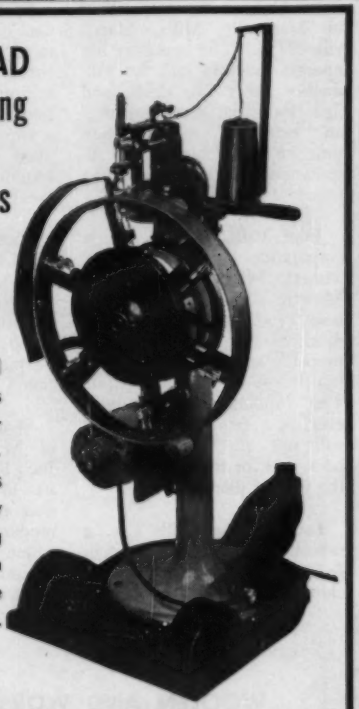
Powers pressure-sensitive Level Regulator offers important advantages over electrical control methods. The Powers system is never "fooled" by the top layer of foam—always controls size level accurately to within 1/8". This bubble system automatically replaces size at the same rate it is used, thereby reducing hard size.

Finally, in the Powers control only the Teflon coated standpipe is in the tank, so you avoid cleaning problems encountered with rapidly caking electrodes . . . virtually eliminate erratically sized yarns and consequent loom stoppages. Powers offices in 66 principal cities—including all textile centers—can supply this system on a material-only or installed basis. Get complete information today.

For complete information on size level control, use reader service card, or write to: The Powers Regulator Company, Dpt. 1157, Skokie, 18, Illinois

SPECIALISTS IN AUTOMATIC CONTROL SINCE 1891

MODEL 31 AD
Piece-end Sewing with SAFE Retractable Pins



20" dia. cloth wheel with 6 pairs of pins retracted by cam for automatic cloth stripping. Retracted pins are safe. Heavy duty gear type sewing head. Single chain stitch. Wide range of stitch adjustments. Motor drive.

DINSMORE MANUFACTURING CO.
Box 267 Salem, Mass.

IT MAKES SENSE, in todays' highly competitive market, that the dyehouse, the converter, and the finisher, look for ways to get more quality into their products, without increasing the end cost. One of the answers is the more exacting color control possible with Macbeth High Fidelity Daylight.

Your color matcher and color inspector, can only correct for colors that they can see. If the color is not in the light source to begin with, it will not be seen, and a serious matching error is possible. By eliminating this possibility of error, you eliminate costly rejects, false starts, and up color quality and color uniformity. You can be sure with Macbeth lighting equipment, because Macbeth Daylight duplicates preferred north sky daylight and therefore has the color content necessary to permit the colorist to see all color, under controlled conditions; thus you are assured that color differences in any product can be seen, enabling the colorist to take any corrective steps that are necessary.

Many important firms within your own industry are now using Macbeth lighting to give them the ideal-standardized inspection conditions they need 24 hours a day. Why not find out today how Macbeth Daylight can help you control spoilage, up quality? For the complete story on "Lighting for Color," write Dept ADR-10 for Bulletin #262.

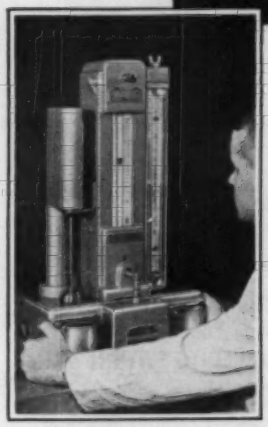
INDUSTRIAL EXAMOLITE (BBX836) for critical color *quality* control. → EXAMOLITE (C-40) for product color *uniformity* produces finest simulated daylight at low cost. ↓

MACBETH
DAYLIGHTING CORPORATION
A Subsidiary of the Macbeth Corp.
PO Box 950, Newburgh, N.Y.

color control begins, but does not end at the dyehouse

See us at American Association of Textile Chemists and Colorists Show, Hotel Statler, Boston, Mass. Nov 14-16, Booth #1.

NEW The Automated MICRONAIRE



- Speeds up checking two to three times.
- Provides a quick, easy, accurate and authorative measure of fiber fineness.
- Indicates the quality and value of the cotton.
- Indicates the dyeing properties.
- Measures the maturity of cotton.
- Predicts the spin-ability of cotton.
- Forecasts the appearance of the yarn and cloth by indicating the number of neps to be expected.

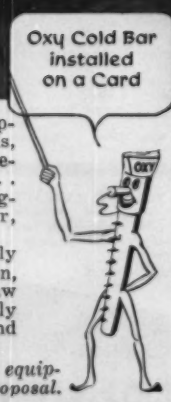
For NEW Book "Advantages and World-Wide use of the Micronaire in all segments of the Cotton and Textile Industries".

Write to Dept. 30—THE SHEFFIELD CORPORATION
Dayton 1, Ohio, U. S. A.

7515R

the SHEFFIELD corporation
manufacture and measurement for mankind
of Bendix Aviation Corporation

HOW HERBERT OXY COLD BARS WILL HELP YOU!



By eliminating static on your equipment—warpers, cards, plaiters, creels, printers, etc. . . . your production becomes smoother, quality improved . . . eliminates ballooning of sliver, clinging to cans and permits smoother, better warps.

The Oxy Cold Bar works equally well on all types of materials, Nylon, Dacron, Orlon, Acetate, Rayon, Raw Silk, Wool, etc. It operates electrically with absolute safety. It is compact and easily installed at the trouble spot.

Send us specifications of your equipment for full information and proposal.

HERBERT PRODUCTS INC.
74-34 JAMAICA AVENUE, WOODHAVEN 21, NEW YORK

4070

NEWS ABOUT MILLS

COTTON MILLS

Berkshire Hathaway, Inc., Providence, R. I., has resumed operations at the King Philip plants E and A, Fall River, Mass., and the Anthony Mill, Coventry, R. I. All three plants had been closed since May 1.

Cone Mills Corp., Florence Div., Forest City, N. C., has ordered 96 change-over deliveries of Ideal Feathertouch drawing.

Fulton Bag & Cotton Mills, New Orleans, La., has sold its textile-bag manufacturing branch in Denver to Fulton Denver Co. The company's Denver operations were confined to the manufacture of bags for the Rocky Mountain area.

Hamilton Cotton Co., Hamilton, Ont., is the new owner of Marysville Mills, Marysville, N. B. The company has opened the idle mill for production of twills, drills, and light industrial sheetings, after an extensive modernization program that included the installation of 20 new spinning frames and air conditioning.

June Mills, Inc., is a new corporation formed to operate Minette Mills, Grover, N. C. Minette Mills, Inc., and Cleveland Products Co. have been dissolved and the corporations' property and assets have been transferred to June Mills, Inc. The corporation change, however, is a temporary one and will not affect management, personnel, or mill operation at the Grover plant.

Lane Cotton Mills Co., a subsidiary of M. Lowenstein & Sons, New Orleans, La., will close for an indefinite period.

Massapoag Mills, Lincolnton, N. C., has been sold to the Shuford textile interests, Hickory, N. C. The Massapoag Mill, a wide-duck producing plant, has been idle for several months. A portion of the equipment had been disposed of before the mill was acquired by the Shuford interests.

Springs Cotton Mills' Eureka plant, Chester, S. C., is planning two large additions at an estimated cost of more than $2-million in order to equalize facilities with improvements already under way at Lancaster, Kershaw, and Fort Mill, S. C. The weave room will be doubled in size, and more space will be provided for preparatory machinery. The Eureka plant now has 76,000 spindles and 1,071 looms.

Swift Mfg. Co., Columbus, Ga., has completed an addition to its plant. The addition, devoted to the modernization of spinning and slashing operations, comprises two floors atop a two-story south wing of the plant and is adjacent to the spinning and dressing departments of the section.

Victor Balata & Textile Belting Co., Easton, Pa., is planning to add a second story to one building to increase manufacturing facilities by 10,000 sq. ft. The construction will be made by Lauter Construction Co., Philadelphia, Pa.

Wamsutta Mills, subsidiary of M. Lowenstein & Sons, Inc., Roxboro, S. C., is moving its towel-manufacturing division to Columbia, S. C. A modern plant is being built where new machinery and equipment from the Roxboro plant will be installed.

WOOLEN AND WORSTED MILLS

Belmont Yarn Mill Corp., Woonsocket, R. I., has closed.

Dominion Woolens & Worsteds Ltd., Hespler, Ont., has closed its Petersborough, Ont., plant and will consolidate operations at Hespler.

Down Carpet Co., Philadelphia, Pa., has purchased a three-story brick warehouse and office building in Philadelphia for expansion purposes.

Lannom Mfg. Co., Tullahoma, Tenn., has started operations in its new woolen-yarn mill. Equipment worth about $880,000 has been installed.

Oak River Mills, Mohasco Industries, Bennettsville, S. C., is a new $3-million carpet-yarn mill that has recently opened. The one-story structure, with a streamlined U-shaped processing flow, is fully air conditioned. There are 12 cards with scouring, dyeing, blending, spinning, and winding equipment to balance. The 115,000-sq.-ft. building has warehouse space to accommodate 1.5-million lbs. of raw wool. Man-made fibers will also be included in production.

Wool Combing Corp., Acton, Ont., has suspended operations.

KNITTING MILLS

Acclaim Hosiery Mills, Inc., High Point, N. C., has leased the Glenn Hosiery Mill property and will transfer its administrative offices and packing and shipping departments there.

Aileen Knitwear Co., New Market, Va., has opened a new plant that will employ about 125 when production is at capacity. The 10,0000-sq.-ft. plant augments a plant, opened last fall in Strasburg, that employs 250.

Alamance Hosiery Mills, new division of Chester H. Roth Co., Burlington, N. C., is expected to reach full production of women's seamless hosiery by the end of the year. Looping operations already have started. When the company reaches full production, it expects to employ about 175 workers with an annual payroll of more than $500,000.

Dalton of America, Cleveland, Ohio, has acquired Christiana Industries, Georgetown, Del. The company has taken over Christiana's air-conditioned plant, equipment, and inventory.

P. H. Hanes Knitting Co., Jefferson, N. C., has begun operations at its new plant. The plant will manufacture men's shorts.

Libby Hosiery Mills, Inc., Asheboro, N. C., has been chartered as the successor to the old Hammond-Cagle Hosiery Mills. The new corporation will produce 51-gauge hosiery.

Park Hill Hosiery Mill, Thomasville, N. C., is in operation and will employ 125 people. The company has leased two buildings in Thomasville, one for a knitting mill and the other for a finishing plant. The mills will produce socks for men and boys and anklets for women and children.

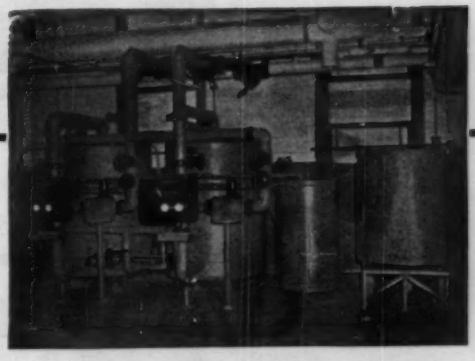
Richelieu Knitting Co. Ltd., and **Champlain Knitting Co. Ltd.**, Sorel, Que., plan construction of a one-story structure at Ste. Anne de la Perade, Que. The brick and concrete block building, which will cost between $50,000 and $75,000, will replace a structure that was destroyed by fire last February.

DYEING AND FINISHING PLANTS

American Dyeing Corp., Vernoin, Conn., has filed a change of name to The Amerbelle Corp.

E. J. Snyder Co., Ware, Mass., will erect a small finishing plant in Albemarle, N. C. The plant will dye and finish cotton, wool, and man-made-fiber knit goods.

Sterling Dyeing & Finishing Co., Philadelphia, Pa., has acquired a 25,000-sq.-ft. building to house a new Orlon-spinning division to be known as Sterling Spinning Mills.



INVERSAND WATER SOFTENER PLANT

Producing

CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.
CLAYTON 9 NEW JERSEY

BEST FOR MARKING TEXTILES AND FABRICS!

JUNIOR EMPIRE

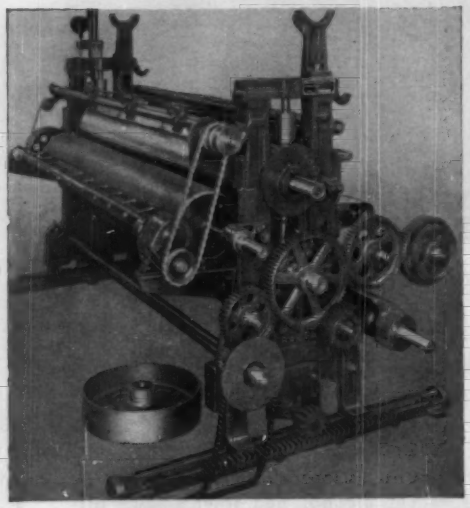
EMPIRE TEXTILE MILL CRAYON

The result of many years of careful study and experiment to meet the particular requirements of the Textile Industry . . . Available in 18 Colors and in Two Sizes! Write for colorful marking guide. Dept. T-8

THE AMERICAN CRAYON COMPANY
SANDUSKY, OHIO NEW YORK

EMPIRE TEXTILE MILL CRAYONS
REG. U. S. PAT. OFF.

"CONVERSION UNITS"
WILL INCREASE the EFFICIENCY of your
PERALTA® MACHINES
CONVERT NOW TO OUR NEW DESIGN BY INSTALLING:



- Off-Set Roll Arrangement
- Doffing Device Attachment
- Hydraulic Pressure

Write us regarding our new type
DOUBLE RUB TAPE CONDENSER
for adaptation to woolen cards

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Specializing in Textiles since 1914

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ENGINEERS • CONSTRUCTORS
SERVES THE RAYON AND TEXTILE INDUSTRY
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Branch Offices Throughout The World

NEWS ABOUT MEN

Stanley Adelman has been elected assistant vice president of M. Lowenstein & Sons, Inc., New York, N. Y.

Mrs. Doris Alperdt has been named assistant to the president of Velveray Corp., New York, N. Y.

S. T. Anderson has been promoted to assistant to the manager, Fieldcrest Mills, Inc., Leaksville, N. C.

Joseph Axelrod has been appointed manager of Arms Textile Mfg. Co., Manchester, N. H.

Robert Bickford has been transferred to the Seneca, S. C., plant of Abbot Worsted Co. He will serve as general manager. He was formerly at the company's Lowell, Mass., plant.

W. A. Bilodeau has been named assistant to Clarence Blaisdell, superintendent of Eastland Woolen Mill, Inc., Corinna, Me.

Herbert Binder has been elected assistant vice president of M. Lowenstein & Sons, Inc., New York, N. Y.

James H. Bowman has been named superintendent of Burlington Industries' Flint plant, Gastonia, N. C.

Andre Blumenthal has resigned as treasurer of Sidney Blumenthal & Co., New York, N. Y.

Warren C. Bufton has announced his plans to retire on December 31 as manager of the Freehold Div., A. & M. Karagheusian, Inc., New York, N. Y.

Morris D. Cammack has been elected vice president of Baker-Cammack Hosiery Mills, Burlington, N. C.

J. A. Conner has been elected president of the Carded Yarn Association.

C. M. Davis has been promoted to senior vice president of Golden Belt Mfg. Co., Durham, N. C.

Eugene Feinerman has been elected assistant vice president of M. Lowenstein & Sons, Inc., New York, N. Y.

Earl A. Hassebrock has been named vice president and general manager of Lowell Bleachery, Inc., St. Louis, Mo.

Frank Heslerwood has been named overseer of carding, Yantic Woolen Mills, Inc., Yantic, Conn., succeeding William Bingham.

Carey R. Kinney has been named president of Elmvale Worsted Co., Pittsfield, Mass.

William G. Liske has been appointed superintendent of yarns at Cyril Johnson Woolen Co., Stafford Springs, Conn.

Philip G. Lovell, vice president in charge of the Fairfax Dept. of Wellington Sears Co., New York, N. Y., has retired.

Alexander J. Maino has been named general manager of Neisler Mills Div., Massachusetts Mohair Plush Co., Kings Mountain, N. C.

Harry C. Minasian has been appointed plant superintendent of Concordia Mfg. Co., Inc., Central Falls, R. I.

N. K. Murphy has been elected vice president of Baker-Cammack Hosiery Mills, Burlington, N. C.

F. R. Piper has retired as assistant manager of Fairfax Mill Div., West Point Mfg. Co., West Point, Ga.

LeRoy Hammett Poole has been promoted to overseer of the cloth room of Pacolet Mfg. Co., New Holland, Ga.

R. N. Rasmus has resigned as vice president and general manager of Lowell Bleachery, St. Louis, Mo.

Edward J. Russell, vice pres-

ident of Troy Blanket Mills, Troy, N. H., has been named vice president of the Northern Textile Association.

John F. Shaw, vice president of Chicopee Mfg. Corp., Chicopee Falls, Mass., has been named vice president of the Northern Textile Association.

Bertram W. Spencer has retired as president of Elmvale Worsted Co., Pittsfield, Mass.

George Simpson has been named general manager of the Yarn Div., Collins & Aikman Corp., New York, N. Y.

Donald Tammany has joined Pepperell Mfg. Co.'s Finishing Div., New York, N. Y. He was formerly with Exeter Mfg. Co., Exeter, N. H.

Joseph L. Turner, superintendent of the Vance Hosiery plant of Burlington Hosiery Co., Kernesville, N. C., has been transferred to the company's Rockwood, Tenn., mill as superintendent.

Henry A. Truslow, president of Ponomah Mills, Taftville, Conn., has been elected president of the Northern Textile Association.

James D. Whatley has been elected vice president of Indian Head Mills, Inc., New York, N. Y.

Textile World

OBITUARY

Millard D. Brown, 75, chairman of the board of directors of Continental Mills, Inc., Philadelphia, Pa.

Leonard L. Campbell, 47, designer in the planning department, Republic Cotton Mills, division of J. P. Stevens & Co., Great Falls, S. C.

Archibald B. Caya, 67, founder and president of A. B. Caya Ltd., Litchener, Ont., and director of Avalon Fabrics Ltd., Stratford, Ont.

Bernard Johnson Dunn, 75, president of High Point Cotton Batting Co., High Point, N. C.

William W. Fulp, 46, secretary-treasurer of Wearmore Hosiery Mill, Winston-Salem, N. C.

William J. Higgins, retired superintendent, Estes Knitting Co.'s mills, Lowell, Mass.

Franklin R. Hoadley, Sr., 67, retired president, Farrell-Birmingham Co., Inc., Ansonia, Conn.

Dr. Hugo J. Kauffmann, 87, research scientist, Becco Chemical Div., Food Machinery & Chemical Corp., Buffalo, N. Y.

Ernest Koella, Sr., 89, founder of Rockford Mfg. Co., Knoxville, Tenn.

Edgar C. Martin, 70, president of Hudson Narrow Fabrics Co., Easley, S. C.

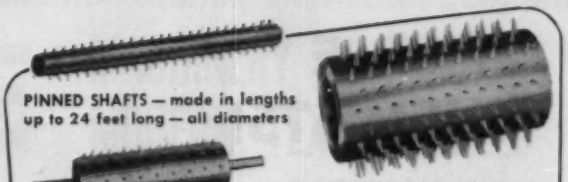
John Robert Mason, 62, vice president of Millville Mfg. Co., Millville, N. J.

Harold Beers Maramore, 68, chairman of the board of Bridgeport Fabrics Co., Bridgeport, Conn.

Walter Cabot Sturdivant, president of Montgomery Knitting Mills and Chattanooga Knitting Mills, Summerville, Ga.

Joseph L. Wade, 73, retired textile chemist, Aberfoyle Mfg. Co., Philadelphia, Pa.

Martin J. Witzel, supervisor for Brookshire Knitting Mills, Inc., Manchester, N. H.



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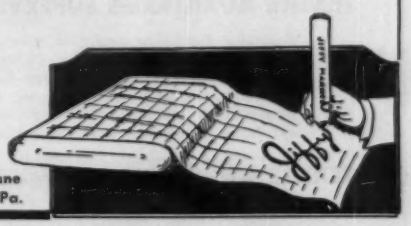

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Bachelor degree or better in chemistry or textile chemistry. Minimum of five years experience with textile auxiliaries and finishing compounds. This experience could be either with textile mills or with auxiliary manufacturers. Should also have fair knowledge of fabric preparation and dyeing. Experience with cellulosics, proteins and synthetic fibers desirable but cellulosic experience is essential.

TEXTILE AUXILIARIES CHEMIST

Bachelor degree or better in chemistry or textile chemistry. Finishing experience desirable but not a specific prerequisite. Must be interested in this type of application.

TEXTILE PRINTING CHEMIST

Bachelor degree or better in chemistry or textile chemistry. Should have had three years or more experience in relation to roller printing on cotton and other fibers. This experience could be with a print works or with chemical or color company servicing the print trade. Must be familiar with formulation and application procedures, both on laboratory and plant scale.

TEXTILE SPECIAL PROJECT CHEMIST

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IMMEDIATE OPENING

for a graduate Textile Technologist with 2-5 years experience in textile application development. Position involves appraisal of market potential of new fibers by interpretation of laboratory data and evaluation at mill and consumer levels. Please send resume of education, experience, references and salary requirements to:

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Attn: Mr. W. H. Billings, Jr.

WANTED—Superintendent for plant manufacturing soft goods in the Linens & Domestic field. Plant 35 miles—South of Memphis, Tenn. Prefer man over 35, with experience in Mechanical and Industrial Engineering. Must have experience as a Plant Superintendent. Also experienced Southern Labor. We would also consider a Mechanical Engineer, or Machine Shop Supervisor for a position as Plant Engineer.

P-6271, Textile World
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

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P-6367, Textile World
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B.S. or M.S. in engineering or textile engineering to supervise adaptation of synthethic fibers to optimum fabric construction. Engineering degree(s) with approximately 10-15 years experience in fabric design and fabric development required. Reply to

THE DOW CHEMICAL COMPANY
James River Division
P. O. Box 576 Warwick, Virginia

POSITIONS VACANT

Salesman Wanted. Southern Manufacturer of textile equipment and supplies, who is also exclusive representative of several leading New England manufacturers, needs additional salesman to cover 150-mile radius of Greenville, S. C. Well established territory. Our own men know of this opening. Prefer man with both sales and practical mill experience, who is now working in same territory. Give full details, references, and compensation expected in first reply. Would wait until January 1 if right man were not available until then. Age is not important if willing to work. Must have own car. P-6390, Textile World.

Additional Employment Advertising on page 258

FOR SALE MACHINERY OF THREE MODERN TEXTILE MILLS

The Former ST. CROIX MILL
Milltown, New Brunswick, Canada

Spinning, Weaving, Dyeing & Finishing

Partial List:

3—S-L Opening and Blending Lines — 1948
5—Aldrich Pickers, 40", 2 beaters — 1948
4—Whitin Roller Top Cards, 40" — 1948
10—Rieter Cards 40", 3 coilers — 1950
66—H & B Cards, 40", 14" coilers
7—Whitin Drawing, L2, 5 del. — 1951
2—Whitin Roving, G10C 10x5, 120 spindles — 1953
9—Whitin Roving, G8, 8 x 4, 138 spindles — 1947
20—Whitin F2 Spinning, 4" ga., 240 spindles — 1947
43—Whitin F Spinning 3¼" and 3½" ga., 240 and 228 spindles
21—Whitin BB Twisters, 4½" ga., 140 spindles — 1950
3—Abbott Cone Winders, No. 65, 100 spindles — 1954
20—Scharer Quillers, 10 spindles — 1947-9
68—C & K Box Looms, C4, 72" — 1949
2—Uster Tying-In Machines 71" — 1949
6—V.V. Stainless Dye Jiggs, 60-65" motor
11—Werner Stainless Dye Jiggs, 70", motor
1—Dalglish Pin Finishing Range, 90' long x 72", P & S Cure Dryer 10 Ton Padder — 1950
1—V.V. Hydraulic Calender, 65", 80 Ton — 1948

The Former MATTAWIN TEXTILES LTD.
Grand'Mere, Quebec, Canada

Yarn Mill, American Cotton Spinning System — New 1951-5

9—Lummus Feeders 38½"
6—Platt Flats Cards 40", 14" coilers, motor
32—Del. Rieter Drawing, Bi-Coil
8—Del. Platt Drawing, 14" coilers
2—W & S Pin Drafters, dual & quad.
1—Holdsworth Gill Reducer, single
3—Rieter Roving 11 x 4½, 90 spindles
2—Rieter Gill Boxes, single
4—Platt Roving 9 x 4½, 132 spindles
16—Platt Spinning 272 spindles, Long Draft, 3¾" ga., 9" traverse
1—Whitin Staple Cutter

UNITED PIECE DYE WORKS
Lodi, N. J.

Dyeing, Finishing, and Printing Machinery of the Former Lodi Plant

Partial List:

40—Blickman & Verduin S.S. Enclosed Dye Boxes 6' x 12'
6—Van Vlaanderen Duplex s.s. Dye Boxes 12', 10' and 8'
1—Rodney Hunt Padder, 66", 2 roll — 17" dia., 12 ton
1—V.V. Super Finishing Range 120' x 66", Nat'l 100' housing Hyd. Padder
1—V.V. Finishing Range, 100' x 66", P & S Housing, and Hyd. Padder
1—V.V. Finishing Range 90' long x 60", Nat'l Housing, Hyd. Padder
1—National Loop Dryer, Model E, 110" sticks, 20 fans
1—National Loop Dryer, 40' long, 10 fans, 84" sticks
1—Proctor & Schwartz Air Lay Dryer, 30' long, 7 fans
3—David Gessner SemiDecaters, pumps and motor
1—Textile Open Washer, 60" 4 Pneu. Squeeze Rolls
3—R B & F Roller Print Machines, 3 colors, 65" wide
1—R B & F Roller Print Machine, 8 colors, 65" wide
1—R B & F Roller Print Machines, 12 colors, 52" wide
4—Deck, Mulhouse Roller Print Machines, 12 colors, 63" wide
1—Butt Vat Ager, 30' long x 60" wide
1—Vat cast iron Ager, 15' long x 60" wide

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10,000# Used Belting, put in rolls, excellent
1,400—Plastic Dobby Sheaves NEW
3,000—Sliding Bar Stop Motion Rods 53⅞"
1,500—30 x 30 Pallets (wooden)
110—Loom Beams (NEW) 24" head, 6P, 44" b/h
5—½ & ¼ ton Electric Hoists, 110 V & 550 V
24,000—NC727 G758 Armstrong Spinning Cots
2 sets New Taylor Recording Slasher Controls
248—XD Looms 46" Dobby
3—B/C Portable Tying Machines, 2-LC 1-LS
50—Brownell Twisters, 32 & 64 sp.
1—Abbott Filling Winder, 100 sp. 1948
1—I/R Air Compressor 12x8, ERI
1—Worthington Compressor 5½ x 5 (10 hp)
1—Quincy Compressor 4 x 2½ x 3 (3 hp)
1—Curtis Compressor 6¼ x 3⅛ x 2¾ (10 hp)
1—Curtis Compressor 4½ x 2 5/16 head only (5 hp)
12—Tecumseh Refrigeration Units, ½ hp
4—Buffalo Air Movers, "Multivane"
3—Sturtevant Blowers, #9 & #7
1—Paper Baling Press 16 x 20 x 36"
1—Clark Mixing Picker, 24" wide, 8 bar cyl. NEW
6—Cocker & Johnson Slashers, 1948 & 1949, 7 can
1—Cocker Warper & Sign Creel, 860 end, 1949
1—Sipp Warper, 1948, EN8049, Cotton system
6—Terrill Bobbin strippers, Model K & L

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1—90' Butterworth Super High Speed Tenter Frame with Butterworth Bullet Padder. Also, 4 W. & J. 90' Frames.

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503 CFM 60 psi 14x10 Ing. ER1
528 CFM 100 psi 14x12 Ing. ER1
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686 CFM 100 psi 14x13 Worth HB
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1007 CFM 110 psi 18-11x14 Chic. OCB
1016 CFM 55 psi 17x13 Ing. ES
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INGERSOLL XRE-870 CFM 125 PSI
17—10½ x 12 Syn 3-60-220

Pennsylvania De2
590 CFM 125 psi — 13½ — 8 x 8
100 HP 3 — 60 — 220 • 8 PF

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American Air Compressor Corp.
Dell & Tex Streets — North Bergen, N. J.

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1 VV 56" 2 roll padder with 2 spare rolls
20 SS dye becks 5' to 16' with and without covers
1 VV 66" tuber doubler with folding attachment
1 50" VV-15 ton hyd. cal. w/spare roll
1 James Hunter 80" 2 rubber roll padder
1 VV 2 rubber roll quetch
1 Birch electric portable rotary sewing machine with Merrow 60D3B
10 SS Finishing Trucks 66"x43"
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1 set of 15-108" copper cans
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1 66" VV low type palmer

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MU 4-5132

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1—Abbott—50 Spindle Bobbin Winder—Year 1954, complete with automatic loader.
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1—Proctor & Schwartz 48" Ball Bearing 8 Bar Super Picker—Year 1945
1—Proctor & Schwartz No. 535—48" Card Feeder. Like New—1947. Motor driven
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1—Foster 102—80 Spindle Cone Winder for Wood Cones 3' 50—Year 1948.
1—James Hunter 72" Pneumatic Squeeze Roll Set—Rolls 18" Diameter complete with Folder and drive—1948
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1—Scott Model Q-3 Tester, 0-600, 0-1500
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1—P. & S. 495, 8 Bar Mixing Picker, 1944
1—P. & S. 36", 12 Bar Shredder Picker, 1944
1—Pacific Evenness Tester, 1953
1—Schofield 42" Carding Waste Picker, 1943
3—Foster 102, 80 sp. Wood Cone Winders, 1948
1—Abbott 50 sp. Quill Winder w/Loader, 1954
1—P. & W. "Vertitex" Cloth Exam. Machine, 1952
2—Hunter 66" Acid Rinse Bowls, 1948
1—Cessner 72" x 36" Semi Decatur, 1948

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1950—Birch Bros. Sample Machine

2—200 Lb. S.D. Rotary's
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3—100, 1—50, 1—75 Lb. Monel
Excellent Condition

7—Yarn Conditioners
H & W • • Lydon • • Electric or Steam
1948-1951 Models • • Like New

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Portable Warp Tie-in Machine
LS Model • • Barber Coleman

2—Reed Cleaning Machines
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2—1956 All Stainless Steel Auto Claves—Complete

3—Sykes Inspection Frames
72" Forward & Reverse

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Model CT—Like New

12—Sipp Eastwood Redraws
1951 • • Spindleless • • 60 Spindles Ea.

10—U. S. Textile Redraws
1950-51 • • 60 Spindles Ea • •
220 V, 7" Bobbin • • Spindleless

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Stainless • • Vertical • • 23x60
Complete and Motorized

1—Atlas Color Fadometer
Type FDAR • • No. 1917

2—Scott Tester Model Q
300—1500 Lbs. Cap.

2—Suter Gram Testers
1200 Gr. Cap.

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Looms Built to Your Specifications

25-U. S. TEXTILE HEADLESS PACKAGE D. D. TWISTERS

160 SPINDLES EACH • • 8" GAUGE • • 1950-51 • • MAGNETIC STARTERS • • 440V, 3 PHASE, 60 CY.
COMPLETE WITH BOBBINS AND ALL ACCESSORY EQUIPMENT • • EXCELLENT CONDITION

ONLY PARTIAL LISTING *SUBJECT TO PRIOR SALE*

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EXCELLENT CONDITION

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3—BLOWERS, ball bearing, 38", 40", Raw Stock, V-belt drives.
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1—D&F SAMPLE CARD, Cyl. 11"x15" dia., 4 Workers, 8" Doffer Comb.
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1—Whitin FANCY RING TWISTER, Model B, 200 Spdle., 4" ga., 3" Ring.
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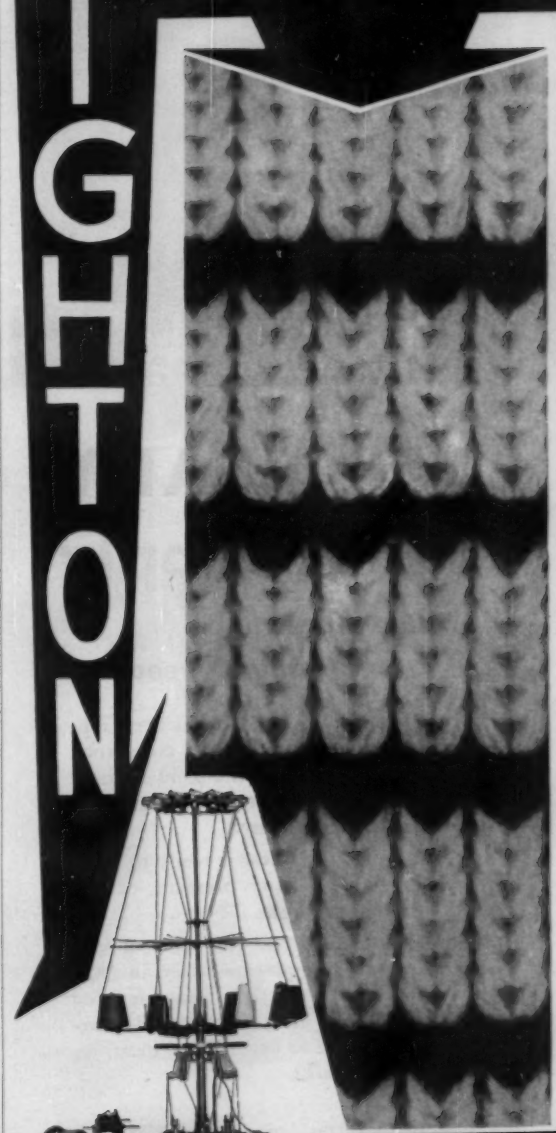

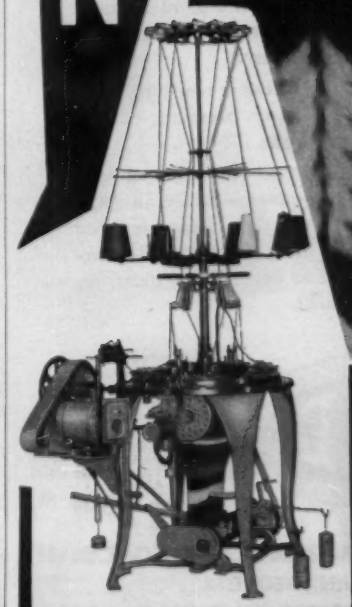

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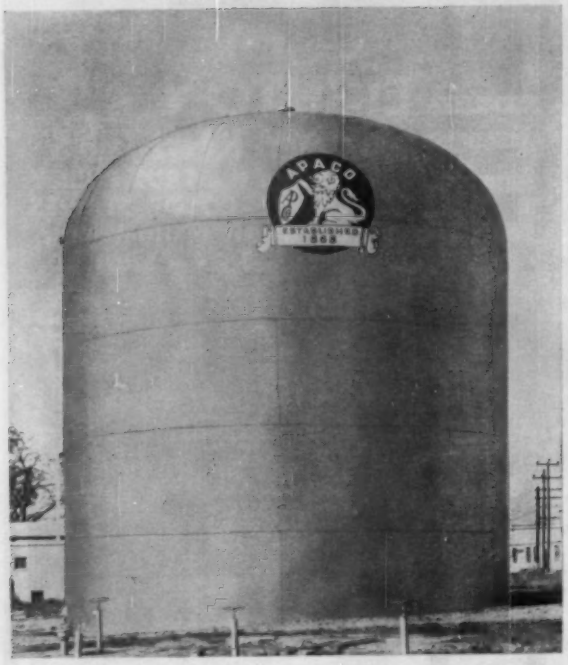

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Kleinewefers Sons, Joh.	67	E
Kuljian Corp., The	250	N
Leighton Machine Co.	259	L
Lincoln Engineering Co.	89	M
Link-Belt Co.	7	Q
Lockwood Greene Engineers, Inc.	245	N
Louden Machry. Co.	87	D P
Loper Co., Ralph E.	250	N
Lubriplate Div., Fiske Bros. Refining Co.	239	M
Ludell Mfg. Co.	80	E
Lunkenheimer Co., The	169	H
Macbeth Daylighting Corp.	247	K
Mackie & Sons Ltd., James	57	E
Main & Sons, Inc., Robert A.	251	T
Manhattan Rubber Div.	68	Q
Maple Flooring Manufacturers Assoc.	236	B
Mathieson Chemicals Olin Mathieson Chem. Corp.	70	C
M-B Products Co.	236	H
McBride, Ed. J.	6	R
Minneapolis-Honeywell Reg. Co. Industrial Div.	72-73	K
Mount Hope Machinery Co.	192	E
Muller, Franz	11	E
Nash Co., J. M.	218	RT
National Aniline Div. Allied Chem. & Dye Corp.	26-27	C
National Drying Machinery Co.	237	E
National Ring Traveler Co.	208	T
Naugatuck Chem. Div. U. S. Rubber Co.	61	C
Nazionale Cogne	211	T
Oakite Prods., Inc.	244	C
Olin Mathieson Chem. Corp. Industrial Chemicals Div.	70	C
Onyx Oil & Chemical Co.	171	C
Ordnance Gauge Co.	220	L
Perfecting Service Co.	228	H
Pneumafil Corp.	16	A T
Powell Co., William	40	H
Powell Valves	40	H
Powers Regulator Co.	247	K
Precision Gear & Machine Co.	238	Q
Proctor & Schwartz Inc.	227	E
Raybestos-Manhattan Inc. Manhattan Rubber Div.	68	Q
Refined Products Co.	2nd Cover	C
Reggiani Meccanotex S. A.	96	E
Ridge Tool Co.	219	H
Roberts Co.	9	P
Rohm & Haas Co.	191	C
Ryerson & Son Inc., J. T.	220	O
Saco-Lowell Shops	34, 152	T
Sandoz, Inc.	81	C
Scherr Co., Inc., George	251	E
Schlumberger & Cie	222	T
Scott Testers, Inc.	219	K
Shawinigan Resins Corp.	207	C
Sheffield Corp.	248	K
Sirrine Co., J. E.	3rd Cover	N
SKF Industries, Inc.	88	O Q
Societe Alsacienne De Constructions Mecaniques	150	T
Solvay Process Div. Allied Chem. & Dye Corp.	85, 262	C
Sonoco Products Co.	56	T
Southern Shuttles Div. Steel Heddle Mfg. Co.	65	R
Square D Co.	167	F
Staley Mfg. Co., A. E.	76	C
Standard Chemical Products Inc.	69	C
Stauffer Chem. Co.	195	C
Steel Heddle Mfg. Co.	65	R
Stein Hall & Co., Inc.	243	C
Stephens-Adamson Mfg. Co.	91	O Q
Stowe-Woodward, Inc.	94	E
Supreme Knitting Machine Co.	203	L

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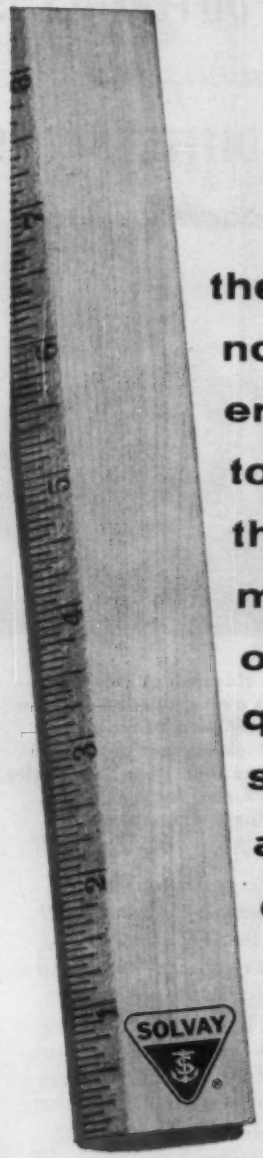

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Taylor, Stiles & Co.	214	T
Tennessee Corp.	161	C
Texas Co., The	4th Cover	M
Textile Banking Co.	196	N
Textile Machine Works	98	L
Textile Recorder Machinery & Accessories Exhibitions Ltd.	201	N
Toledo Scale Co.	210	K
Tompkins Bros.	232	L
Torrington Co., The (Needles)	229	L
Turbo Machine Co.	71	L
Union Carbide Chemicals Co. Div. of Union Carbide Corp.	198	C
U. S. Rubber Co. Naugatuck Chem. Div.	61	C
U. S. Steel Corp.	231	O
Universal Winding Co.	172	T
Uster Corp.	82	K

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Veeder-Root, Inc.	59	K
Vickers Inc. Div. of Sperry Rand Corp.	79	E H O
Wallerstein Co., Inc.	245	C
Warner & Swasey Co.	13	RT
Western Felt Works	189	L RT
Westinghouse Electric Corp.	60, 184-185	F
Motors & Controls	215	F Q
West Penn Power Co.	223	N
West Point Foundry & Machine Co.	2	R
Whitin Machine Works	43, 154	T
Wiegand Co., Edwin L.	226	E
Wildman-Jacquard Co.	54	L
Wolf & Co., Jacques	58	C
Wood's Sons Co., The T. B.	200	Q
Wright Machinery Co. Div. of Sperry Rand Co.	246	K
Yale & Towne Mfg. Co.	175	P

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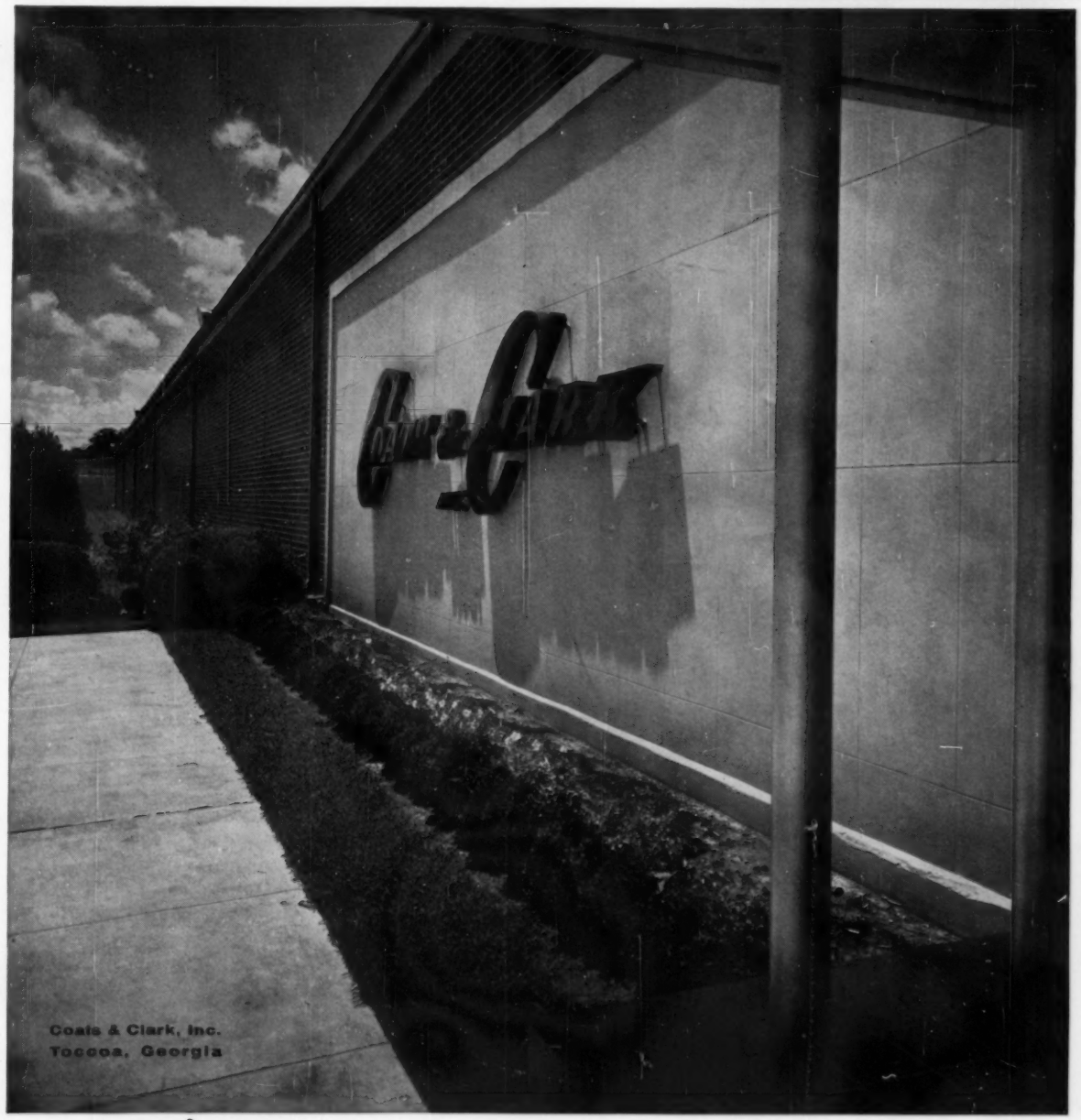

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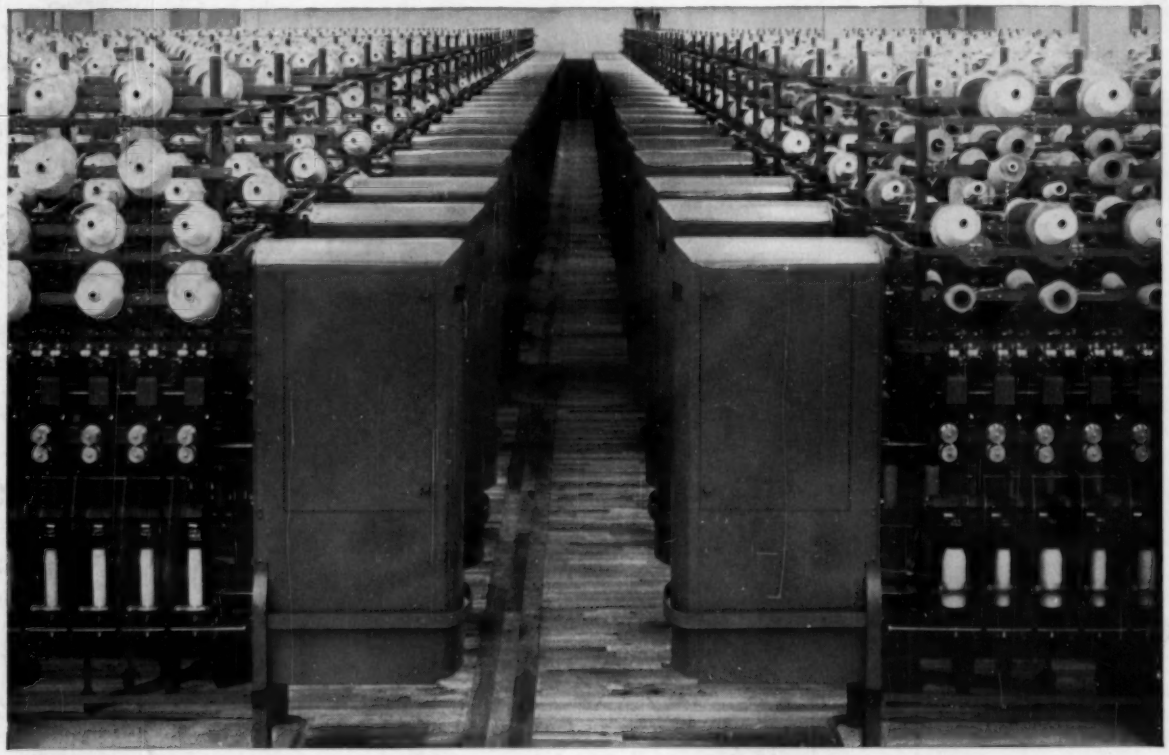

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